

# **A COMPARATIVE STUDY OF BREAST LUMP IN PREMENOPAUSAL AND POST MENOPAUSAL WOMEN IN GVMCH**

**DISSERTATION SUBMITTED TO**



**THE TAMIL NADU DR.MGR MEDICAL UNIVERSITY**

**In the partial fulfilment for the award of**

**M.S.Degree in General Surgery**

**Branch I**



**GOVT. VELLORE MEDICAL COLEGE**

**MAY-2018**

# **CERTIFICATE**

Certified that this is the Bonafide dissertation done by  
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Requirement for degree of **MASTER OF SURGERY** Branch 1 of  
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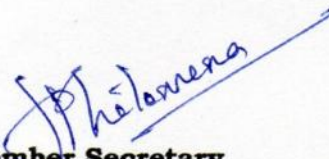
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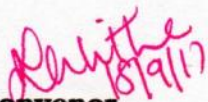
**Ethical Committee No.0214/2016 Dt.06-10-2016**

- |                               |  |
|-------------------------------|--|
| <b>Title of the Study</b>     | – A comparative study of breast lump in premenopausal and postmenopausal women in GVMCH, Vellore |
| <b>Principal Investigator</b> | – Dr.V.Binesh Sankar.,   |
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The request for an approval from the Institutional Ethical committee (IEC) was considered on the IEC meeting held on 06.10.2016 at the Conference Hall, Got. Vellore Medical College, Vellore-11.

The members of the committee, the secretary, the convenor and the president are pleased to approve the proposed work mentioned above submitted by the Principal Investigator.

  
**Member Secretary**  
**MEMBER SECRETARY**  
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### Sources included in the report:

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## **DECLARATION**

I whole heartedly declare that the Dissertation title “**A COMPARATIVE STUDY OF BREAST LUMP IN PREMENOPAUSAL AND POST MENOPAUSAL WOMEN IN GVMCH**” was done by me at Govt.Vellore

Medical college and Hospital, Vellore during the period of October 2016 to September 2017 under the guidance of eminent Professor,**Dr.R.Rajavelu MS.FRCS.**

The dissertation submitted to Tamil Nadu DR.MGR Medical University towards the Partial Fulfilment of the requirement for the award of **MS DEGREE IN GENERAL SURGERY BRANCH I**

**DR.BINESH SANKAR V**

**Place:**

**Date:**

## **ACKNOWLEDGEMENT**

I wish to thank our respectable Dean **Dr.M.LALITHA.MD** for granting permission to conduct the study in our Hospital. I am thankful to Professor, Head of Department and my guide **Prof.Dr.R.Rajavelu MS.FRCS** for his excellent expert advice in this dissertation for his continuous encouragement, monitoring follow up. I extend my thanks to Department of pathology also. At last I thank all of Assistant professors and my co-post graduate for their Guidance.

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## **LIST OF ABBREVIATIONS**

- 1.HPE- HISTOPATHOLOGICAL EXAMINATION
- 2.FNAC- FINE NEEDLE ASPIRATION CYTOLOGY
- 3.DCIS- DUCTAL CARCINOMA INSITU
- 4.LCIS- LOBULAR CARCINOMA INSITU
- 5.TB -TUBERCULOSIS
- 6.USG- ULTRASONOGRAM
- 7.MRI-MAGNETIC RESONANCE IMAGING
- 8.MTC- MEDULLARY THYROID CARCINOMA
- 9.Ca- CARCINOMA
- 10.CT- COMPUTERISED TOMOGRAM
- 11.IDC-INVASIVE DUCTAL CARCINOMA
- 12.ILC –INVASIVE LOBULAR CARCINOMA
- 13.RFT-RENAL FUNCTION TESTS
- 14.LFT-LIVER FUNCTION TESTS
- 15.TSH- THYROID STIMULATING HORMONE
- 16.TC-TOTAL COUNT
- 17.HB- HAEMOGLOBULIN
- 18.DC- DIFFERENTIAL COUNT
- 19.NST- NO SPECIFIC TYPE

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## **ABSTRACT**

**BACKGROUND:** A prospective study in 100 female patients with a palpable breast lump. Based on triple assessment of breast, clinical examination, histological and radiological study. This study compared the pattern of breast swelling in premenopausal and postmenopausal woman and the most common breast lump in each group.

**METHODS:** Total 100 female patients with palpable breast lump were divided equally into premenopausal (50 patients) and postmenopausal group(50 patients). Each patient went through clinical examination, FNAC, core needle biopsy(if needed). USG breast was done in all patients, mammogram was done in selected patients. All post operative specimen were sent for histopathological examination.

**RESULTS:** Among total 100 patients,60 patients had a benign breast disease,40 patients had a malignant breast disease. In Premenopausal women , 82 % patients had a benign disease.In post menopausal women, 38% patients had a benign disease.In pre menopausal women, 18% patients had malignant breast disease.In post menopausal women, 62% patients had malignant breast disease. Among malignant disease of breast

60%)were invasive ductal carcinoma of the breast, 32.5% were invasive lobular carcinoma of the breast , 5% were invasive medullary carcinoma of the breast,2.5% was inflammatory carcinoma of the breast.

**CONCLUSION:** In my study malignant breast disease is more common in post menopausal women. Benign breast disease is more common in pre menopausal women. Fibrocystic cystic disease of breast is the most common benign breast disease among all women. In premenopausal women, there is very high percentage of invasive lobular carcinoma when compared to patients with malignant breast disease in general population in india. In post menopausal women , the most common malignant breast disease was invasive ductal carcinoma breast NST/NOS. There was higher percentage of invasive lobular carcinoma. when compared to patients with malignant breast disease in general population in india.

**KEYWORD:** insitu, carcinoma, histopathology, ultrasound, mammogram , invasive, benign, malignant.

## **INTRODUCTION**

A palpable breast swelling is a clinically palpable swelling in the breast which can be benign or malignant. Development of breast, both morphological and functional, are initiated and regulated by a number of hormonal stimuli. Pattern of breast disease in prepubertal, reproductive and postmenopausal age groups varies due to the effect of these hormones. The major effects are as a result of the action of estrogen, progesterone and prolactin.

Most of the breast swellings are benign and only 5-10% of the swellings are malignant.

## **TRIPLE ASSESSMENT OF BREAST**

Many tests, clinical, histological and radiological, are available for detection and evaluation of breast swelling. Triple assessment of breast swelling includes clinical, histopathological and radiological assessment of the breast. Fine needle aspiration cytology or core needle biopsy is preferred method for histological diagnosis. Ultrasound breast is done in younger women and mammogram in older women as a screening investigation.

## **AIM OF THE STUDY**

The objective of the study was

**Primary objective** – to determine and compare breast lump in premenopausal and postmenopausal women in GVMCH from october2016 to September 2017(1 year)..

**Secondary objective -**

1. To Determine and identify benign and malignant breast lump in premenopausal and postmenopausal women in GVMCH.
2. To determine the most prevalent high risk group for carcinoma breast .
3. To determine the most common benign and malignant breast swelling in premenopausal and postmenopausal woman in GVMCH

## **MATERIALS AND METHODS**

This study is a prospective study. This study was conducted in 100 female patients attended general surgery OPD ,divided into two groups. Patients were divided based on their menstrual status. Half of the patients belong to postmenopausal group and half of the patients were premenopausal women with menstrual cycle. A total of 100 female patients having a clinically palpable breast swelling were included in the study. Female patients who had no menstrual bleed for the last 12 months were included in postmenopausal woman and other patients were considered as premenopausal. Females who had natural cessation of menstrual bleed were only included in the study population. Patients who had underwent hysterectomy or were having ovarian problems and those patients whose menopausal status not clearly specified were not included in the study. Patients taking oral contraceptive medications or other hormonal medications were excluded from the study. Study group also excluded patients with a personal history of cancer other than breast cancer. The average age of attaining menarche in postmenopausal women was 14.3 years and in premenopausal women was 14.2 years.

Study period – 1 year.

OCT 2016 to SEP 2017.

Study hospital – Government vellore medical hospital and college,  
vellore , tamil nadu.

Study design – prospective study design.

All patients were studied in detail with clinical examination ,  
histopathological examination and ultrasound examination. Selected  
patients underwent mammogram and MRI of the patient.

All patients were subjected to fine needle aspiration cytology.  
Patients in whom FNAC were inconclusive were subjected to core needle  
biopsy. In all operated cases the post operative specimen was sent for  
histopathological examination.

Patients with malignancy underwent metastatic workup like  
chest x-ray , x-ray of long bones, liver function tests, USG abdomen.

Results were studied under 4 groups.

Group 1

Premenopausal women with benign breast disease

Group 2

Premenopausal women with malignant breast disease

Group 3

Postmenopausal women with benign breast disease

Group 4

Post menopausal women with malignant breast disease.

Out of the total 100 patients 82 patients underwent surgery. All post operative specimen were sent for histopathological examination and final HPE report were collected for all the patients.



## **RESULTS**

In this study , out of 100 female patients 50 patients had attained menopausal status and 50 patients were pre menopausal.

Out of the 50 post menopausal women 42% attained menopausal status at 45 years or earlier and rest 58% attained menopause after 45 years of age.

### **Age incidence**

Age of the patients studied ranged between 25 years and 76 years. Mean age of patients was 47.7 years. Among all the patients, 58% of patients were diagnosed between 40 and 60 years, 25% of patients were aged younger than 40 years and 17% of patients were aged older than 60 years.

Out of total 100 patients, overall 56% patients presented with history of 2-6 months duration, 22% of patients had presented with complaints of more than 12 months duration, 14% of patients presented with 7-12 months duration of symptoms.

Youngest patient aged 25 years.

Oldest patient aged 76 years.



### **Clinical examination findings**

All patients were clinically examined for the lump and axillary nodes. Out of the total 100 patients around 68 patients were diagnosed to have a benign breast disease and the rest 32 patients were diagnosed to have malignant breast disease

### **Ultrasound findings**

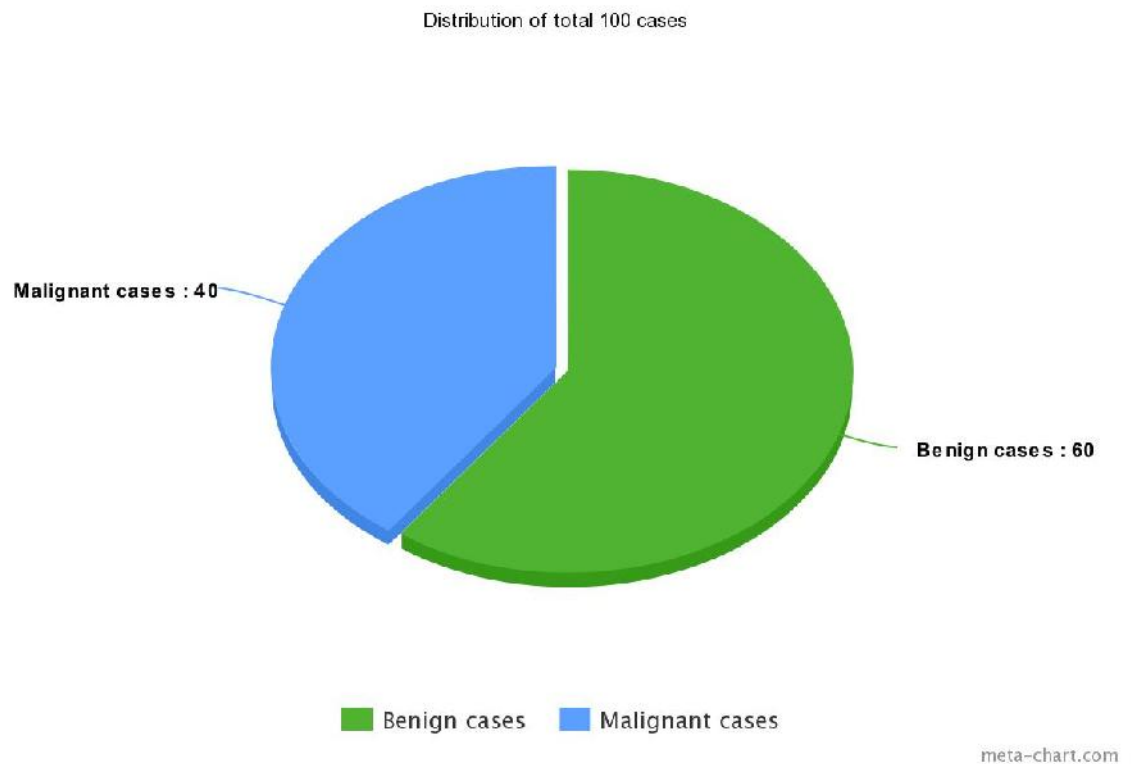
Among the total 100 patients studied , 63 patients were reported as probably benign and 26 patients were probably malignant. In 11 patients ultrasound examination was inconclusive. All patients were suggested HPE correlation.

Final diagnosis based on FNAC , core biopsy and post operative specimen histopathological examination.

Among total 100 patients

60 patients had a benign breast disease.

40 patients had a malignant breast disease.



### **Percentage of benign breast disease in 2 study groups**

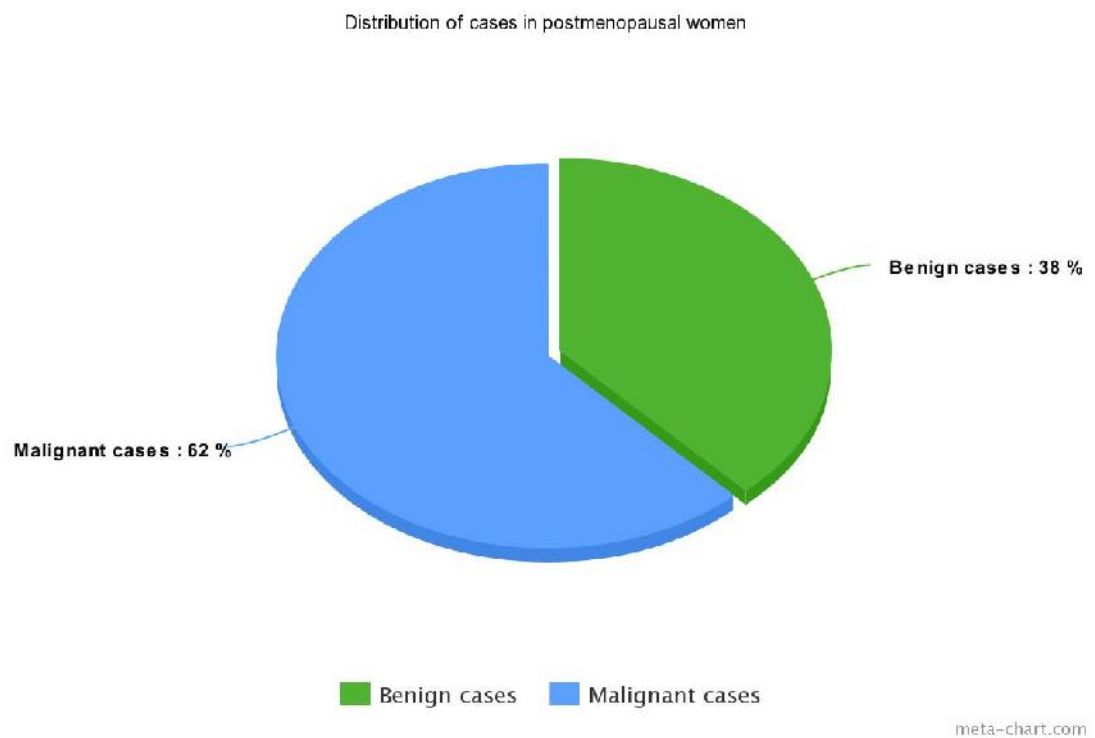
In Premenopausal women , 82 % patients had a benign disease.

In post menopausal women, 38% patients had a benign disease.

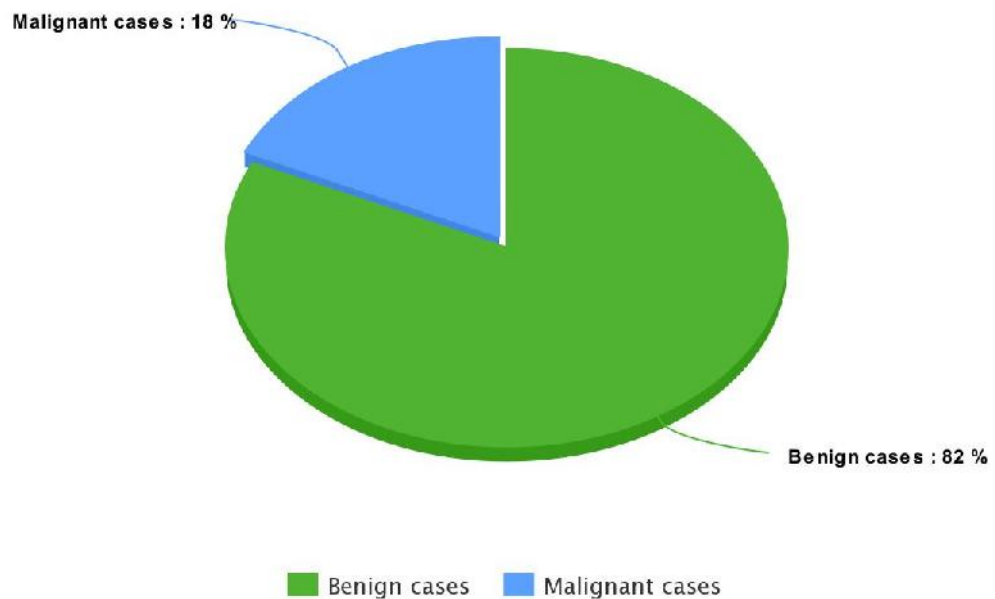
### **Percentage of malignant disease in 2 study groups.**

In pre menopausal women, 18% patients had malignant breast disease.

In post menopausal women, 62% patients had malignant breast disease.



Distribution of cases in premenopausal women



meta-chart.com

### **Among total 100 patients**

24 patients were diagnosed as fibroadenoma.

27 patients were diagnosed as fibrocystic disease of breast.

24 patients were diagnosed as invasive ductal carcinoma of breast NST

13 patients were diagnosed as invasive lobular carcinoma of breast.

3 patients were diagnosed as benign phyllodes tumor of breast.

2 patients were diagnosed as invasive medullary carcinoma of breast

2 patients were diagnosed as galactoceles

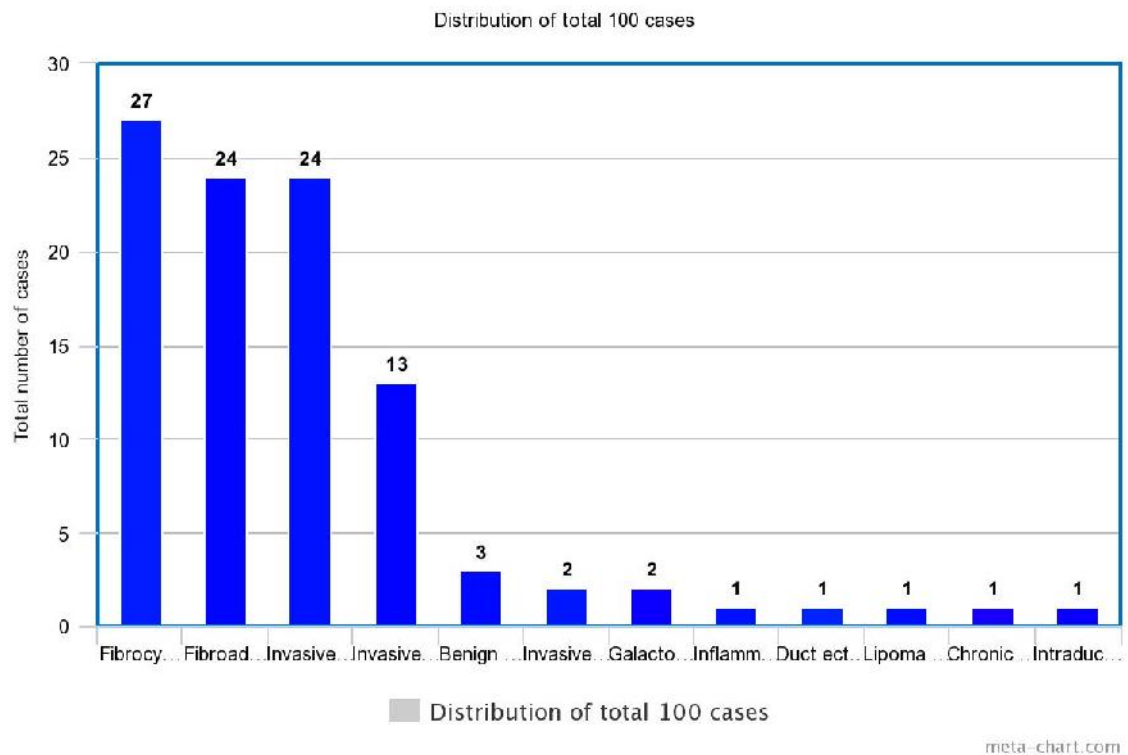
1 patient was diagnosed as inflammatory carcinoma breast.

1 patient was diagnosed as duct ectasia.

1 patient was diagnosed as lipoma of breast.

1 patient was diagnosed as chronic breast abscess.

1 patient was diagnosed as intraductal papilloma of breast.



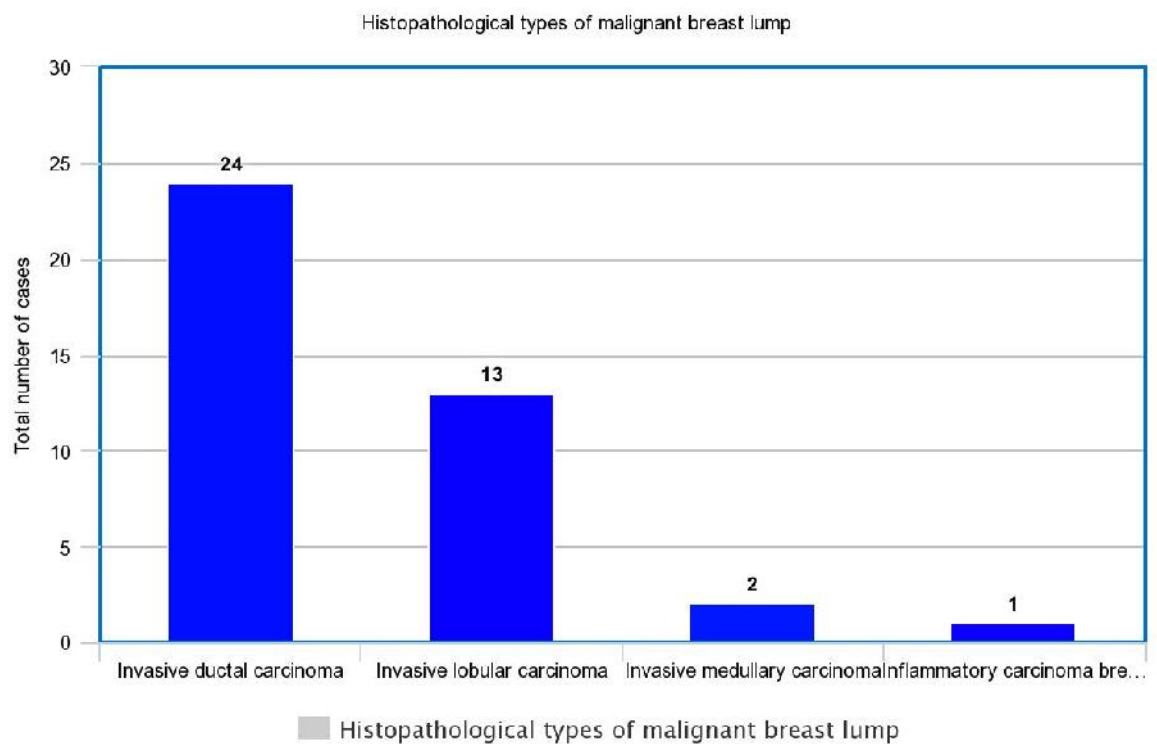
### Among malignant disease of breast

24 cases (60%) were invasive ductal carcinoma of the breast NST.

13 cases ( 32.5%) were invasive lobular carcinoma of the breast.

2 cases ( 5% ) were invasive medullary carcinoma of the breast.

1 case ( 2.5% ) was inflammatory carcinoma of the breast.



meta-chart.com

**Distribution of malignant disease in 2 groups.**

31 cases ( 77.5% of total number of malignant disease ) belonged to post menopausal group.

9 cases ( 22.5% of total number of malignant disease ) belonged to premenopausal group.

**Distribution of benign disease in 2 groups.**

19 cases ( 31.6% of total number of benign breast disease) belonged to post menopausal group.

41 cases ( 68.4% of total number of benign breast disease) belonged to pre menopausal group.

### Among pre menopausal women with benign diseases

24 patients (58.5%) were diagnosed as fibroadenoma.

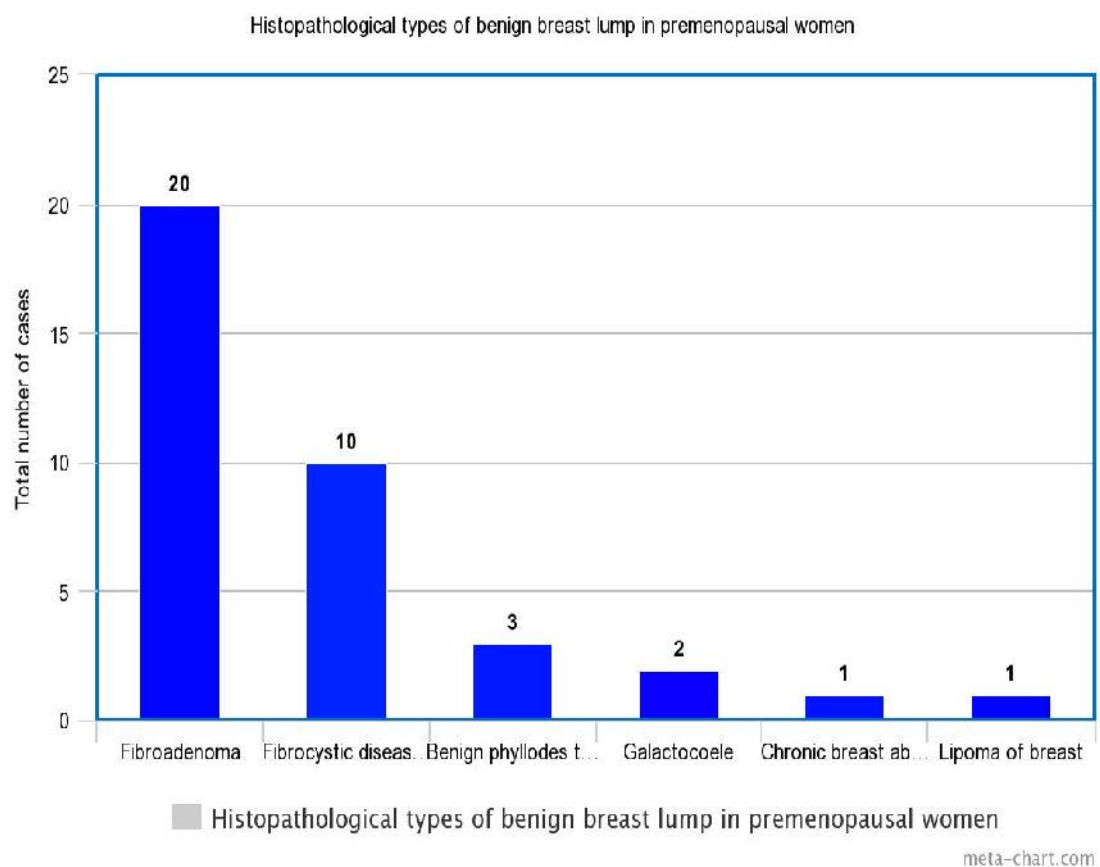
10 patients( 24.3%) were diagnosed as fibrocystic disease of breast

3 patients (7.3%) were diagnosed as benign phyllodes tumor

2 patients (4.9%) were diagnosed as galactocoele

1 patient(2.5%) was diagnosed as chronic breast disease

1 patient(2.5%) was diagnosed as lipoma of breast.



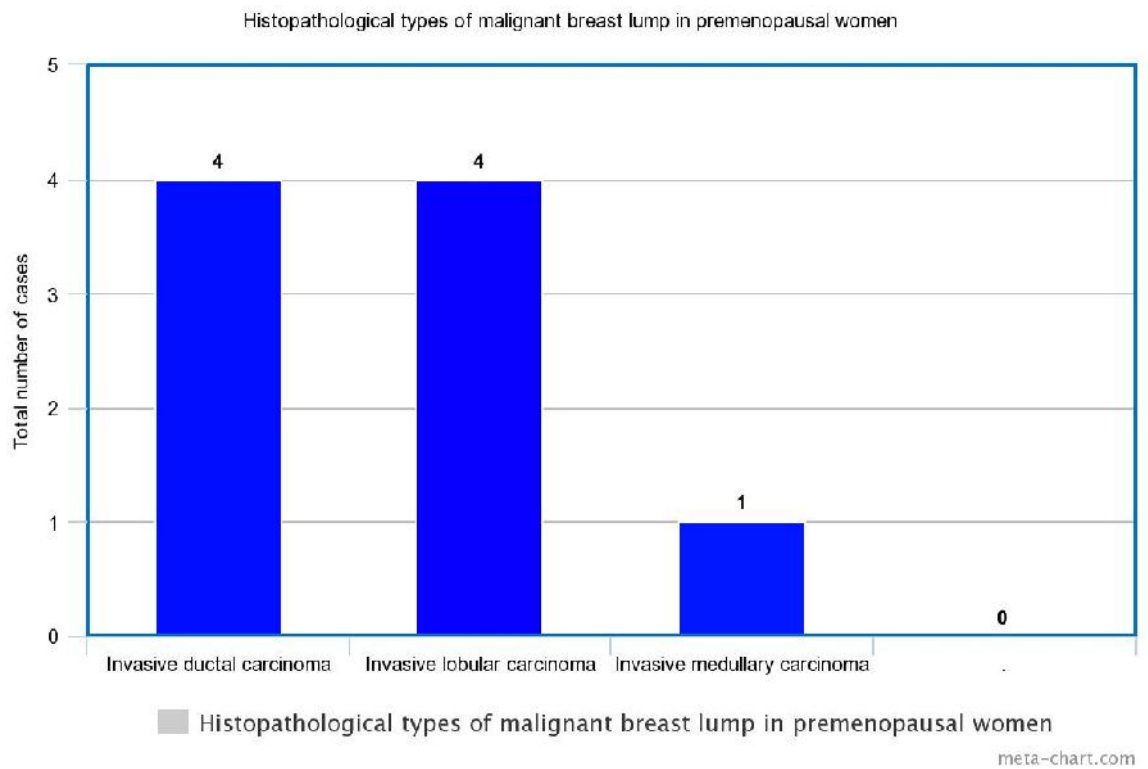


### Among pre menopausal women with malignant disease

4 patients (45% ) were diagnosed as invasive ductal carcinoma NST/NOS.

4 patients ( 45% ) were diagnosed as invasive lobular carcinoma.

1 patients (10%) was diagnosed as invasive medullary carcinoma.

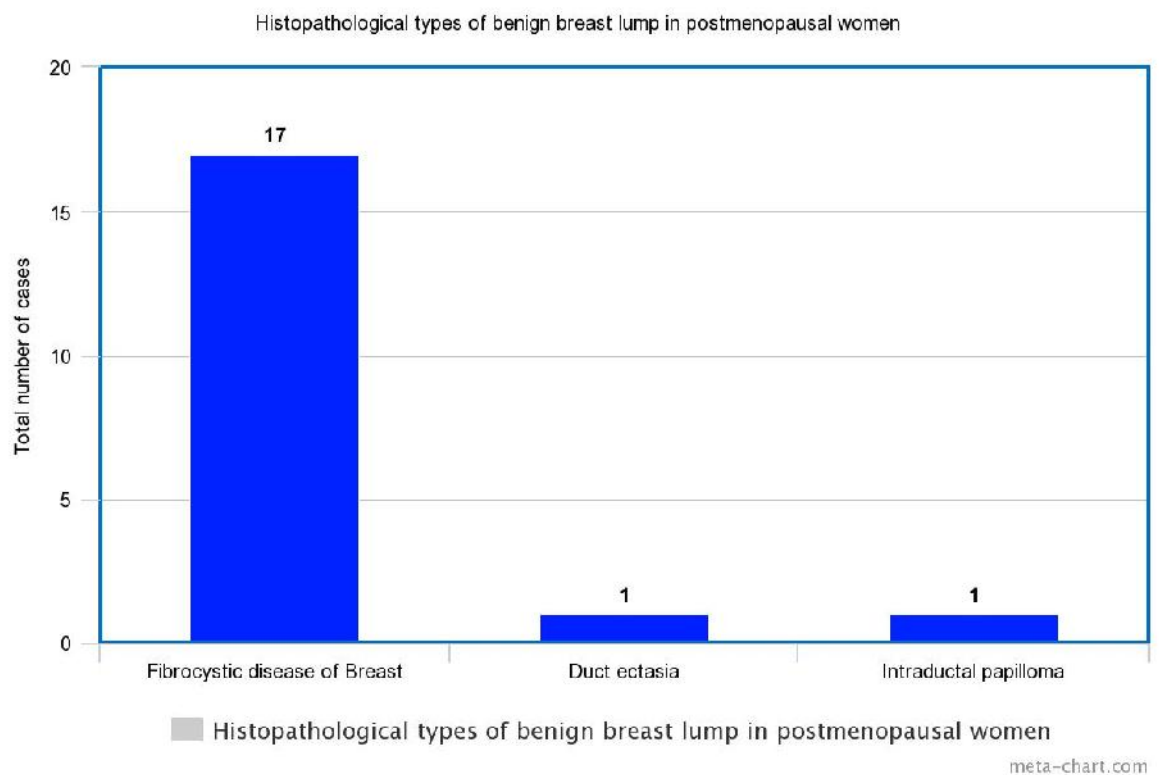


### Among post menopausal women with benign disease

17 patients (89.4%) were diagnosed as fibrocystic disease of breast

1 patient (5.3%) was diagnosed as intraductal pappilloma.

1 patient (5.3% )was diagnosed as duct ectasia.



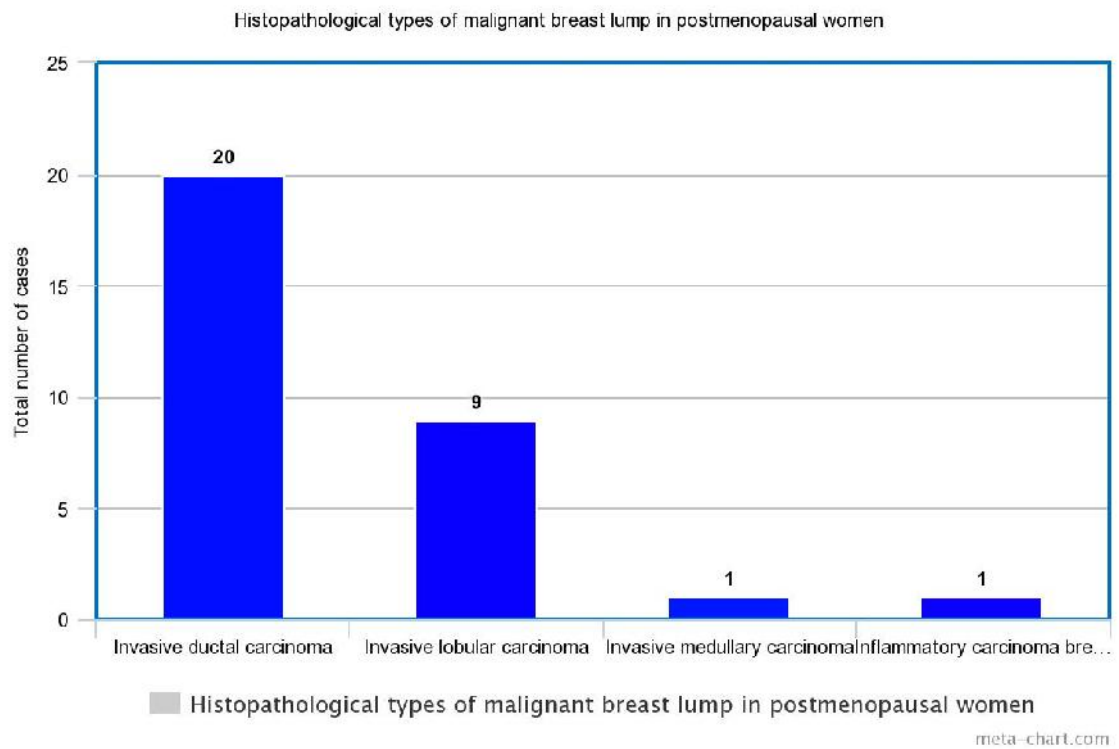
### Among post menopausal women with malignant breast disease

20 patients (64.5%) were diagnosed as invasive ductal carcinoma.

9 patients (29.%) were diagnosed as invasive lobular carcinoma.

1 patient (3.25%) was diagnosed as invasive medullary carcinoma.

1 patient (3.25%) was diagnosed as inflammatory carcinoma breast.



## **DISCUSSION**

All patients included in the study , the presenting complaint was a lump in the breast. Few patients had a pain in the breast associated with lump. Associated features of malignancy like dimpling , nipple retraction , asymmetry between 2 breast were present in about 25 patients. Nipple discharge was present in about 5 patients. About 52 patients had a lump in the left breast and the rest of the patients had a lump in the left breast. In most of the patients , lump was present in the outer upper and outer inner quadrant of the breast. Histopathological study of either core needle biopsy or post operative specimen was the confirmatory test in all the patients. Fine needle aspiration cytology was done in all the patients. Core needle biopsy was done in 15 patients in whom FNAC results were inconclusive.

All patients were subjected to ultrasound examination of the breast. By ultrasound benign fibrous nodules, complex cysts, suspicious lesions and lesions highly suggestive of malignancy were identified. Cystic or solid nature of the lesion were also identified.

In selected patients mammogram and MRI of the breast were taken. Abdominal ultrasound, chest x-ray, long bone x-rays, complete haemogram, renal function tests, and liver functions tests were done as a part of metastatic work up in patients with malignant breast disease.

Invasive ductal carcinoma NST is the most common malignant breast disease in general population(70%), tubular(2%),colloid(2%), medullary(5%), cribriform (2%), papillary (1%). Invasive lobular carcinoma is second most common (10%)

Out of the total 100 patients studied 60% of the patients had a benign breast disease and the rest had a malignant breast disease.

In pre menopausal women 82% of the patients had a benign disease and rest 18% had a malignant breast disease.

In post menopausal women , 38% of patients had a benign breast disease and rest 62 % patients had a malignant breast disease.

Out of the total 100 patients 27 patients had fibrocystic disease of breast which was the most common benign disease in the study. Among patients with malignant breast disease , invasive ductal carcinoma breast was the most common malignancy with 24 patients followed by invasive lobular

carcinoma with 13 cases. The percentage of invasive lobular carcinoma was higher in study group when compared to the breast malignancy in general population.

In pre menopausal women , 41 patients had a benign breast disease with most common benign breast disease being fibroadenoma with 24 cases. The most common malignant breast disease in premenopausal women were invasive ductal carcinoma and invasive lobular carcinoma with 4 cases each. The percentage of invasive lobular carcinoma was very high in study group when compared to malignant breast disease in general population.

In post menopausal women 19 patients had a benign breast disease and 31 patients had a malignant breast disease. Most common benign disease in post menopausal women was fibrocystic disease of breast with 17 cases. The most common malignant breast disease was invasive ductal carcinoma breast with 20 cases, second most common was invasive lobular carcinoma with 9 cases. The percentage of invasive lobular carcinoma was higher in study population than in general population with malignant breast disease.

Age at menarche was almost similar in both premenopausal and post menopausal women. There was not a single case of carcinoma insitu reported.

The prevalence of malignant breast tumours was found to be higher in post menopausal women than in pre menopausal women.

The study helped in early detection and treatment of ca breast. It helped in identifying the histological type of ca breast there by allowing to detect multifocal and multicentric lesions in the same or opposite breast.

This study shows an increased incidence of lobular carcinoma breast as compared to general population. Lobular carcinoma breast is associated with poor prognosis , more recurrence due to its multifocal and munticentric nature.

A comparative study of pre- and post-menopausal breast cancer: Risk factors, presentation, characteristics and management.Aruna Surakasula, Govardhana Chary Nagarjunapu, and K. V. Raghavaiah. Among 100 female patients taken up for the study, 48 were premenopausal and 52 had reached menopause. The mean age of presentation for breast carcinoma

was a decade earlier in these patients compared with western patients. The risk factors for both pre-and post-menopausal breast cancer were found similar other than late menopause in postmenopausal patients. Having dense breast tissue was a predominant risk factor among all women. Late presentation was the common phenomenon in almost all patients(8)

Breast cancer risk factors: a comparison between pre-menopausal and post-menopausal women. Butt Z<sup>1</sup>, Haider SF, Arif S, Khan MR, Ashfaq U, Shahbaz U, Bukhari MH. Among the breast cancer patients, 42.7% were pre-menopausal and 57.3% were post-menopausal. Nulliparity was a risk factor for both pre-menopausal and post-menopausal breast cancer . Among parous women only post-menopausal females having < 3 children were at increased risk for breast cancer compared with females having >3 children. Majority of risk factors for pre-menopausal breast cancer are also associated with postmenopausal breast cancer except less parity, which increased the risk for post-menopausal breast cancer only.(9)

Association of Menopausal Status with Pathological Features of Tumor in Stage I to III A Breast Cancer. Humera Mahmood, Consultant Oncologist, NORI Islamabad.



Grade of tumor, lymphovascular invasion and HER2/neu over expression in stage I to IIIA breast cancer has statistically significant association with menopausal status.(10)

Risk of different histological types of postmenopausal breast cancer by type .Dieter Flesch-Janys,Tracy Slanger,Elke Mutschelknauss,Silke Kropp,Nadia Obi,Eik Vettorazzi,Wilhelm Braendle,Gunter Bastert,Stefan Hentschel,Jürgen Berger,Jenny Chang-Claude. Information on histological type was available for 3,450 (99.6%) of the cancers, of which 3,245 (94.1%) were invasive (2,229 invasive ductal, 670 invasive lobular, 153 mixed ductal-lobular, 98 invasive tubular and 95 other) and 205 (5.9%) were *in situ* (174 ductal, 20 lobular, 11 other)(11)

Risk Factors for Specific Histopathological Types of Postmenopausal Breast Cancer in the NIH-AARP Diet and Health Study.Sarah J. Nyante Cher M. Dallal Gretchen L. Gierach Yikyung Park Albert R. Hollenbeck Louise A. Brinton.The most common histological types are ductal (70%–75% of tumors), lobular (8%), and mixed ductal-lobular (7%–11%) (1, 2). Other tumors include special variants of ductal breast cancer, defined by specific growth patterns, and other histological types. The mucinous special variant (2% of tumors) is characterized by a large amount of epithelial mucin within and surrounding tumor cells (1–3). The tubular

variant (1%) is characterized by a glandular growth pattern in more than 75% of the tumor (1–3).(12)

Benign Breast Diseases: Classification, Diagnosis, and Management. Merih Guray and Aysegul A. Sahin. Benign breast diseases constitute a heterogeneous group of lesions including developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations, and neoplasms. In this review, common benign lesions are summarized and their relationship to the development of subsequent breast cancer is emphasized.(13)

Current concepts Benign Breast Disorders Richard J. Santen, M.D., and Robert Mansel, M.D., Ph.D. The morphologic features of the breast undergo substantial change between early adolescence and menopause.<sup>5</sup> The spectrum of normal histologic features ranges from a predominance of ducts, lobules, and intralobular and interlobular stroma to features that exhibit mainly patterns of fibrous change and cyst formation(14)

Clinicopathological characteristics of patients of certain molecular subtypes and elevated postoperative cancer antigen 15.3 levels and its correlation with menopausal status. Soumi Saha, Suvro Ganguly, Diptendra Kumar Sarkar, Avijit Hazra. Clinicopathological characteristics of certain molecular subtypes and influence of menopausal status on it can predict disease recurrence or overall survival of breast cancer patients.(15).

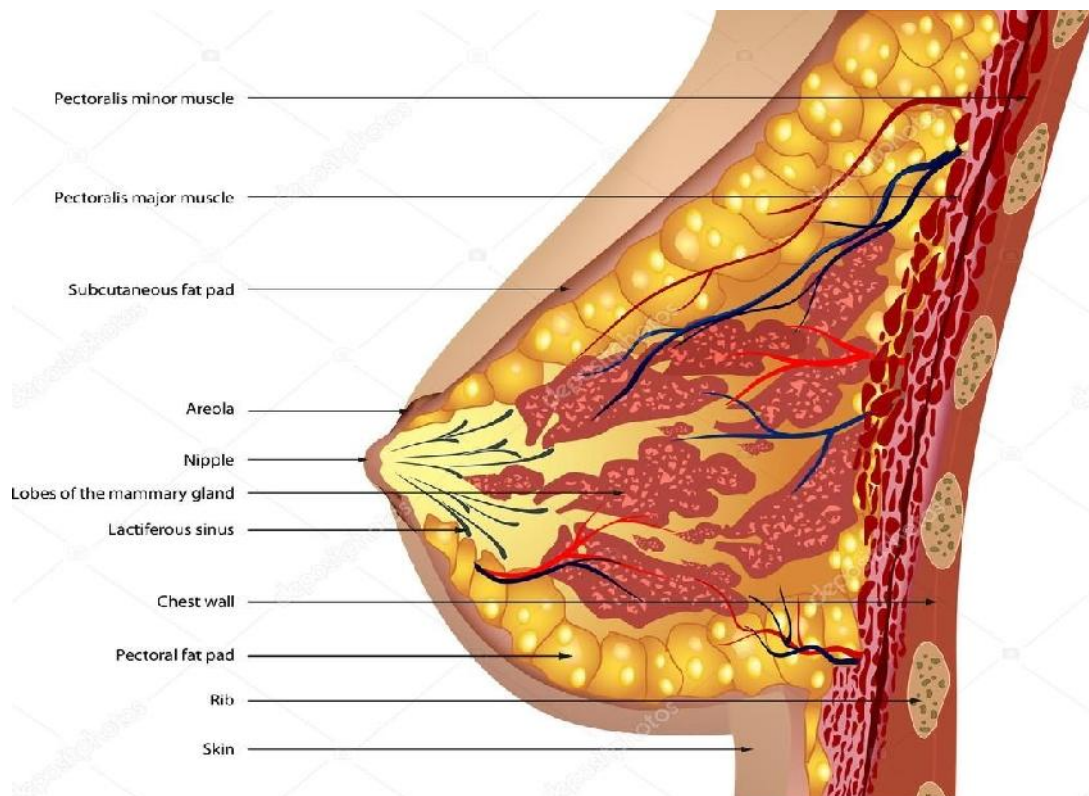
## **EMBRYOLOGY**

The mammary ridges or the milk line develop as two ventral bands of thickened ectoderm at 5<sup>th</sup> to 6<sup>th</sup> week of the development of foetus. It extends from base of upper limb to base of base lower limb. This soon disappears except for a small region in pectoral region where a pair of breast develop. Accessory breast or nipples may develop along the mammary ridge.

## **ANATOMY OF BREAST**

The breast lies in adipose tissue in between superficial pectoral fascia and subcutaneous fat. Deep to breast lies the retromammary space and pectoralis major muscle, serratus anterior and external oblique. Deep to pectoralis major lies pectoralis minor muscle in clavipectoral fascia.

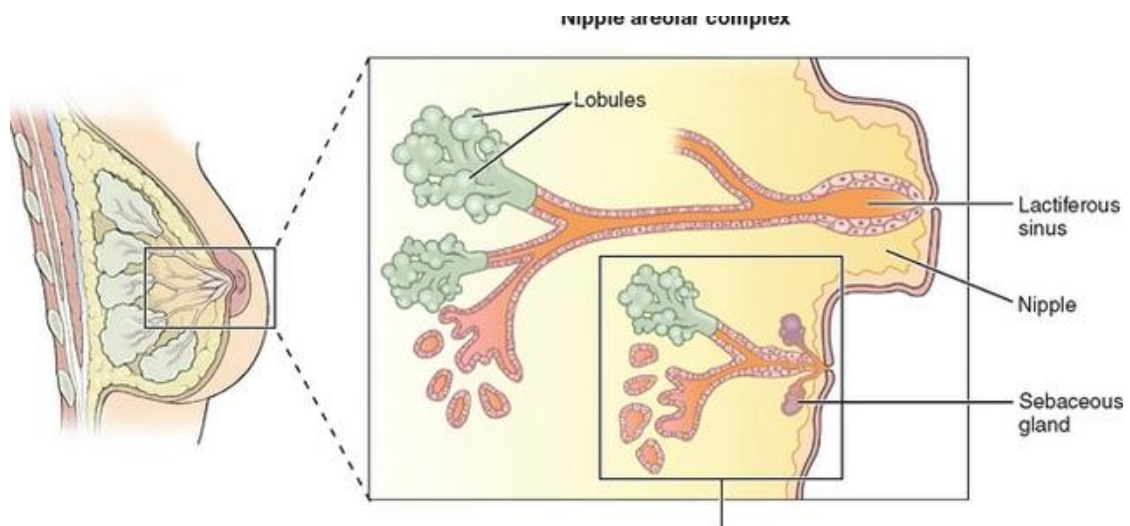
Above it extends from 2<sup>nd</sup> rib to 6<sup>th</sup> or 7<sup>th</sup> rib below. Form anterior axillary to just lateral to sternum. Nipple is the level of 4<sup>th</sup> intercostal space. Areola is circular pigmented area around nipple. Breast contains 15-20 lobes in its parenchyma. Axillary tail of Spence is a direct extension of breast into the axilla through foramen of langer which is a defect in the deep fascia.



## FUNCTIONAL ANATOMY OF BREAST

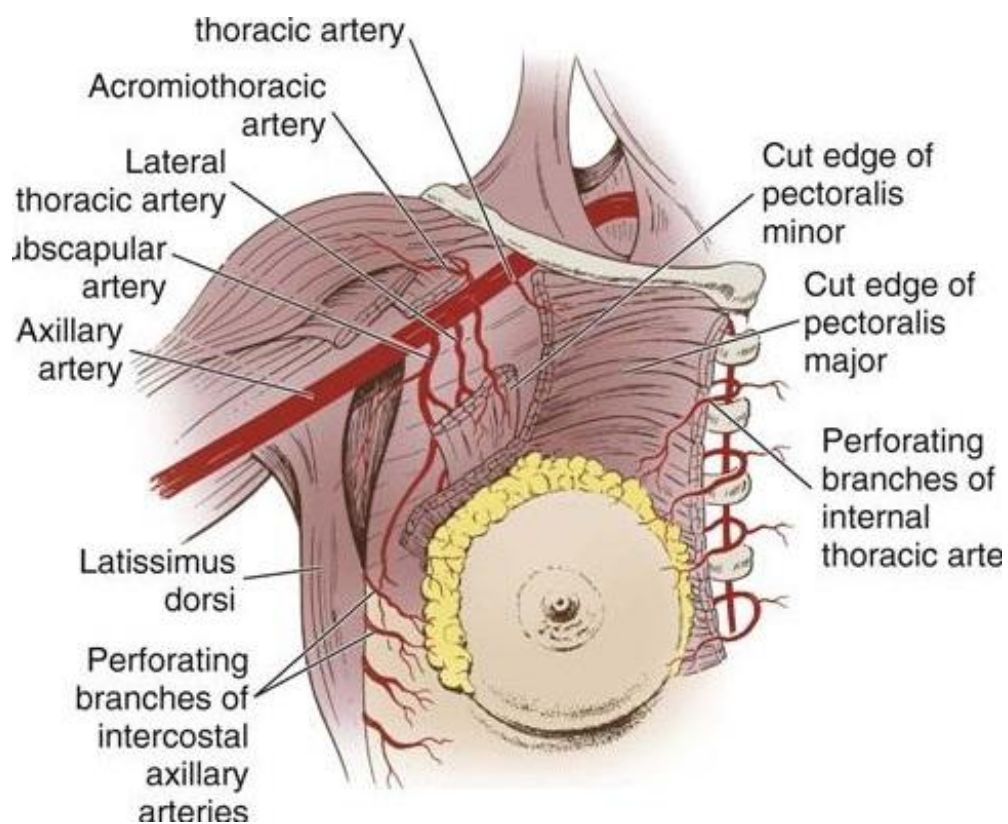
Breast is made of 15-20 lobes which consists of several lobules. Each lobule form a milk secreting unit. Structural support is provided by coopers ligament. The nipple and areola is pigmented . the areola contains accessory sebaceous glands called Montgomery's tubercles. Smooth muscle fibres are present in stroma and around the lactiferous ducts. Numerous sensory nerve endings are present at the dermal papillae at the tip of nipple.

Each lobe is drained by a major lactiferous duct ( 2-4mm in diameter ) which opens in to single separate orifice at the nipple. Distended portion of major duct below nipple is called lactiferous sinus. There are 15-20 separate orifices for each lactiferous duct at the nipple.



## ARTERIAL SUPPLY

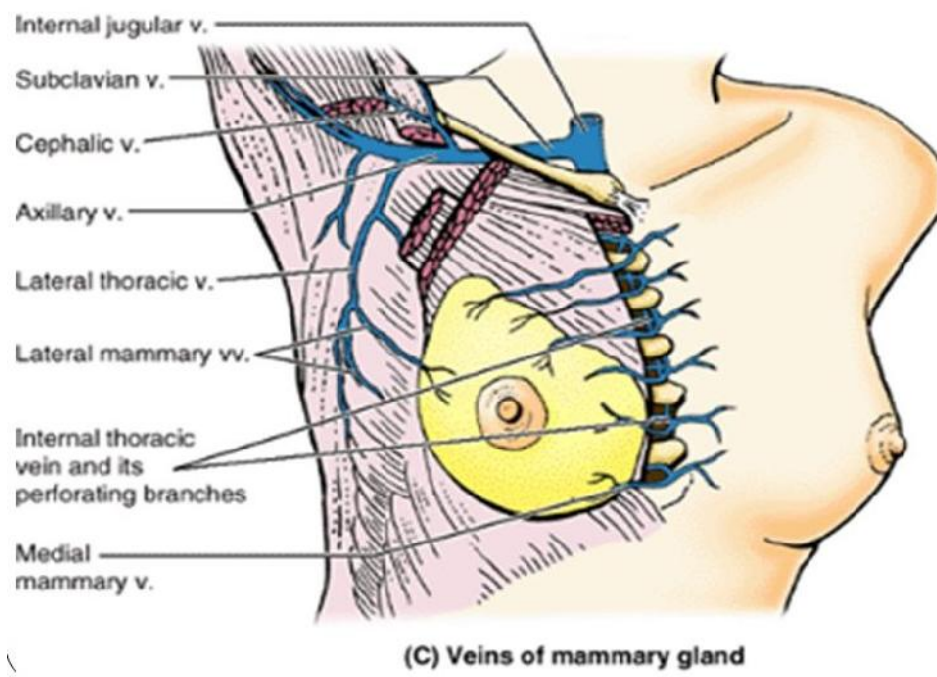
1. 60% of blood supply comes from the perforating branches of internal mammary artery. Branches enter through the 2<sup>nd</sup> , 3<sup>rd</sup> and 4<sup>th</sup> intercostal spaces. Internal mammary artery originates from the subclavian artery
2. 30% of blood supply comes from the lateral thoracic artery. Lateral thoracic artery originates from the axillary artery.
3. Branches of acromiothoracic artery as pectoral branches
4. Lateral branches of 2<sup>nd</sup> to 4<sup>th</sup> posterior intercostal arteries



## VENOUS DRAINAGE

The major group of venous drainage are

1. Internal thoracic or mammary vein through perforating branches
2. Perforating branches of 2<sup>nd</sup> 3<sup>rd</sup> and 4<sup>th</sup> posterior intercostal veins
3. Minor tributaries draining into axillary vein



## LYMPHATIC DRAINAGE

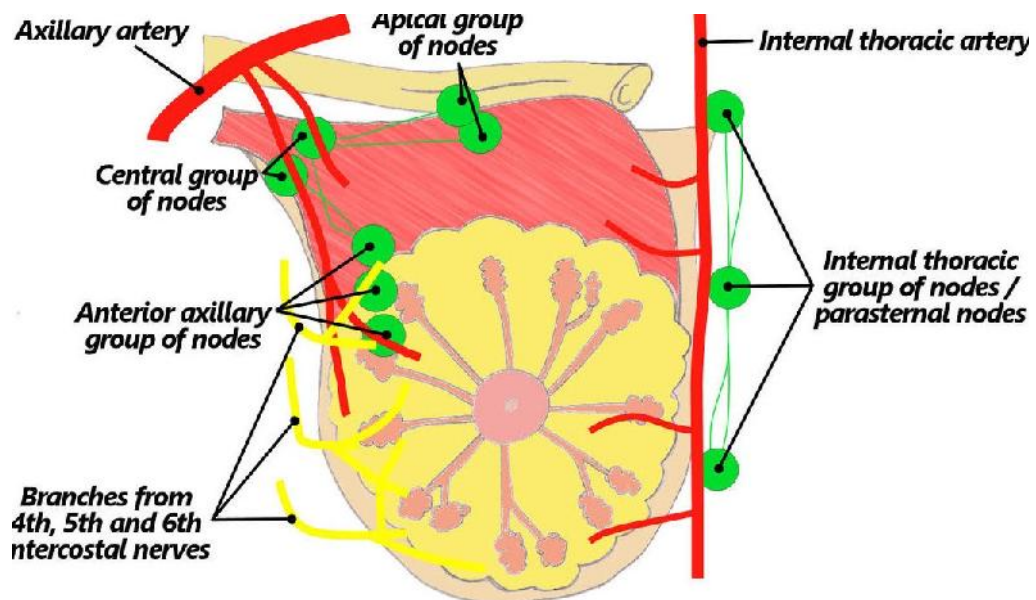
75 % drains into the axillary lymph nodes

1. Mainly drains in to anterior or pectoral group along the lateral thoracic vessels
2. Next main drainage into central group
3. Posterior or subscapular group



4. Lateral nodes along axillary vein
5. Subclavicular or apical nodes
6. Interpectoral or rotter's node between pectoralis major and minor

25% of lymphatic drainage from medial half of the breast drains in to internal mammary nodes in 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> intercostal spaces.



## **BERG'S LEVEL OF AXILLARY NODES**

Level 1 includes lateral, anterior and posterior nodes lying below and lateral to pectoralis minor muscle

Level 2 includes central nodes lying behind the pectoralis minor muscle

Level 3 includes apical group lying above and medial to pectoralis minor muscle

## **NERVE SUPPLY**

Breast is supplied by the 4<sup>th</sup> to 6<sup>th</sup> intercostal nerves through anterior and lateral cutaneous branches

## **PHYSIOLOGY OF BREAST**

Before puberty breast is mainly composed of dense fibrous stroma and a few ducts lined with epithelium. At puberty there is raised serum estradiol concentration which leads to maturation of breasts. Ductal development is initiated by oestrogen while progesterone helps in differentiation of epithelium and lobular development. Adrenal, pituitary, trophic effects of insulin and thyroid hormones also play a role

Post pubertal breast during different phases of menstrual cycle undergoes cyclical stimulation due to the effect of hormones. There is hypertrophy and hyperplasia of breast.

During pregnancy there is reduction in fibrous stroma and increase in lobules due to adenosis of pregnancy. This is influenced by high circulating levels of estrogen and progesterone and prolactin that increases as gestational age increases. Prolactin initiates milk secretion by synthesis of milk fat and proteins in late pregnancy and lactation. Milk ejection is by oxytocin which stimulates contraction of myoepithelial cells resulting in compression of alveoli and expulsion of milk into lactiferous sinuses. After pregnancy and lactation breast returns to a resting state

With menopause, due to hormonal deficiency breast undergoes involution and decrease in epithelial and ductal elements in the breast. There is increase in fat content and decrease in connective tissue and lobular units

Exogenous hormones like hormone replacement therapy can lead to persistence of lobules, ductal and lobular epithelial hyperplasia.

## **PHYSICAL EXAMINATION OF BREAST**

Examination is first done with patient in sitting position ,then arms raised above the head, with hands on her hips pressing and with patient bending forwards .breast is inspected for masses , asymmetry and skin changes. Nipples are examined for discharge , inversion , retraction and any superficial ulcerations. Skin of the breast is examined for dimpling , puckering or peau d' orange appearance. These are caused by obstruction of lymphatics or involvement of coopers ligament

Inspection is followed by palpation. Four quadrants are examined systematically. Any lump palpated is assessed for local rise of temperature, situation, number, size, shape, surface, margin , consistency, fluctuation , transillumination ,fixity to skin , fixity to breast tissue, fixity to fascia and muscles, fixity to chest wall. Palpation of the nipple areola complex also done

Axilla is examined for any nodes

## **INVESTIGATIONS**

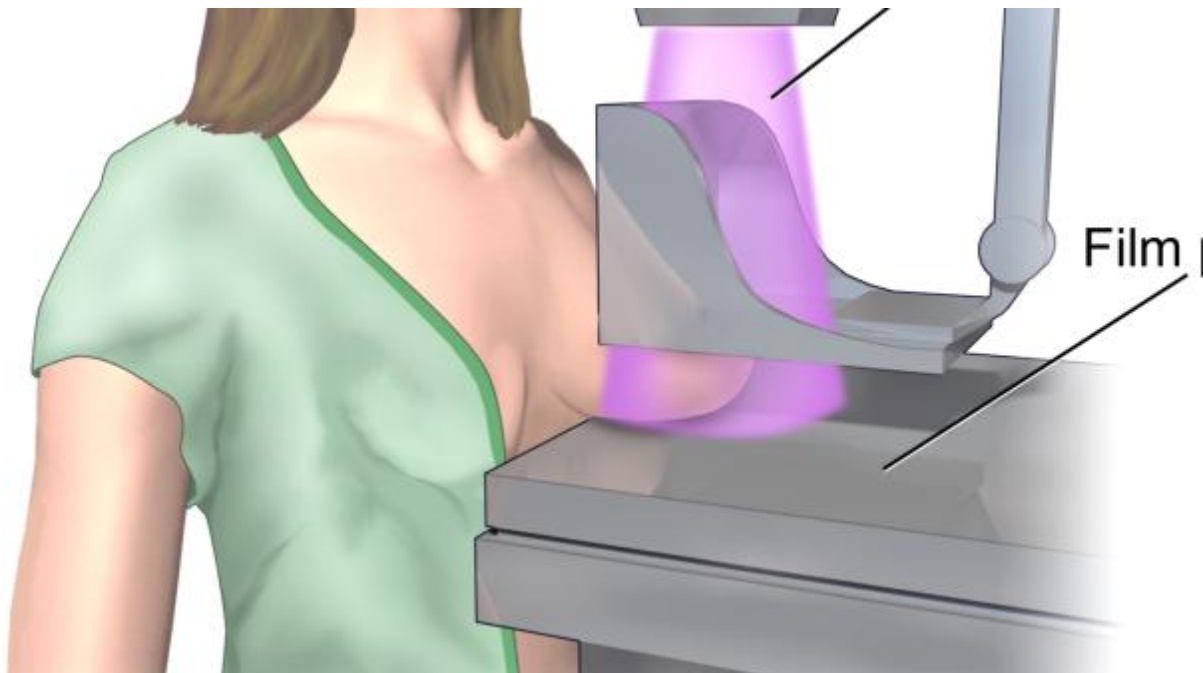
### **FINE NEEDLE ASPIRATION CYTOLOGY**

FNAC has become inevitable in diagnosis of breast lump. It can differentiate cystic from solid lesions. FNAC is a very less invasive technique . FNAC is a outpatient procedure, no anaesthesia is required, cost effective and low complications. It gives a rapid and a very accurate cellular diagnosis . False negative results can also occur mainly due to improper sampling . FNAC cannot differentiate invasive cancer from in-situ disease.

### **LARGE CORE NEEDLE BIOPSY**

Core needle biopsy decreases sampling error as the biopsy volume increases. It allows more extensive biopsies to be taken. Core needle biopsy can be done under mammographic or ultrasound guidance. About 4-12 samples are taken from different sites in the mass , or from area of architectural asymmetry or microcalcifications . Core needle biopsy has a very low false positivity rate as compared to FNAC . Hormone receptor study can also be done using core needle biopsy specimen

## **BREAST IMAGING**



## **MAMMOGRAPHY**

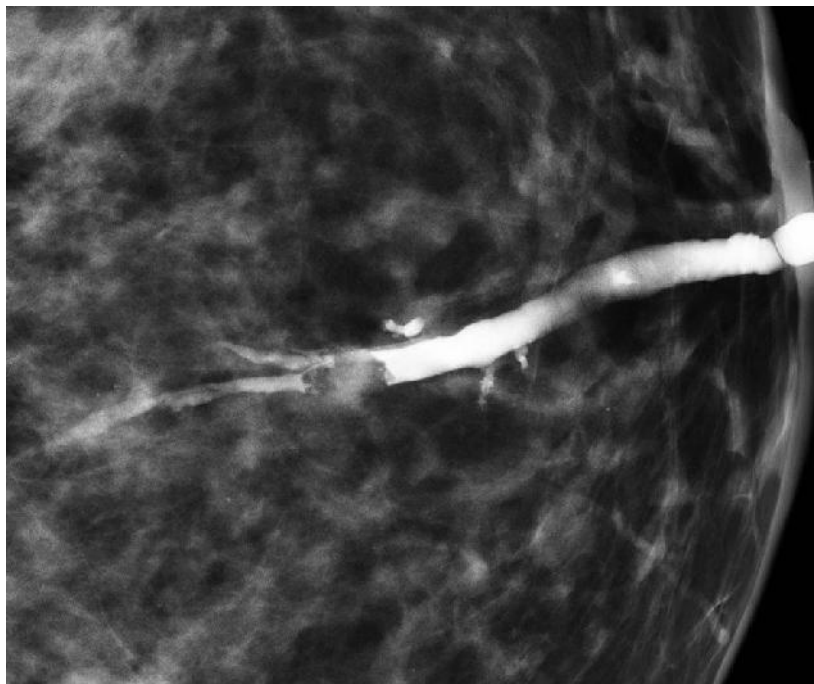
Screening mammogram takes two films , the craniocaudal view and mediolateral oblique view. Mediolateral view images greatest density of breast with axillary tail of Spence. Craniocaudal view gives better imaging of medial aspect the breast.

Diagnostic mammogram is done symptomatic women with breast mass or nipple discharge.. Mammography guided FNAC or core needle biopsy can also be done. Features suggestive of malignancy in mammogram are solid mass with or without stellate features, breast tissue with asymmetric

thickening and microcalcifications. Presence of fine stipple calcifications in and around a lesion.

## **DUCTOGRAPHY**

Nipple discharge is the primary indication. X-rays are taken after injecting radioopaque material into one or more major ducts. A blunt canula is inserted after dilating a duct. Small filling defects suggest intraductal papilloma. Irregular masses or multiple intraluminal filling defects suggest malignancy.



## **ULTRASONOGRAPHY**

Ultrasonography is more useful in young women with dense breasts. It distinguishes cystic from solid lesions. Non palpable areas of the breasts can be examined. Ultrasound guided FNAC and core needle biopsy can be done. Axillary tissue can be examined for presence of nodes.

Benign lesions in breast show smooth outline, round or oval shapes, weak internal echoes with well defined margins all around. Malignancy has characteristic irregular walls, smooth margins sometimes with acoustic enhancement. Lymph node in axilla with features like cortical thickening, circular appearance, size more than 10mm, absence of fatty hilum and low internal echoes are suggestive of malignancy.

## **COMPUTED TOMOGRAPHY**

Helps to image internal mammary nodes. CT of chest helps to evaluate extension of mass into the chest wall and to assess the chest parenchyma.



## **MAGNETIC RESONANCE IMAGING**

MRI can be useful in many situations like

1. To distinguish scar from recurrence in women who previously had breast conservation surgery
2. Best imaging technique in women with breast implants
3. Screening modality in high risk woman ( family history of breast malignancy) as it picks up early and small lesions
4. In identifying occult breast cancer with lymph node positivity

## **COMMON BENIGN BREAST LESIONS**

1. Fibroadenoma
2. Fibrocystic disease of breast.
3. Benign phyllodes tumor.
4. Galactocele
5. Traumatic fat necrosis
6. Breast abscess
7. Duct ectasia
8. Simple cyst
9. Intraductal papiloma
10. Tuberculosis of breast
11. Lipoma of breast.

## **FIBROADENOMA**

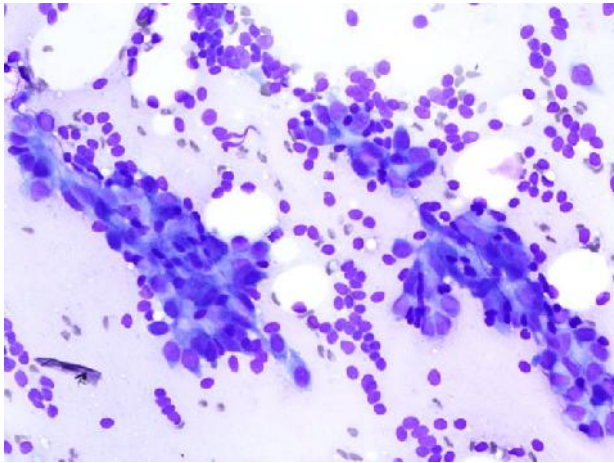
Fibroadenoma is benign tumour in young females. It is benign well encapsulated tumour. Occurs due single lobule of the breast undergoing hyperplasia. Aberration in normal development of a lobule. Comprises 15% of all breast lumps palpable. Giant fibroadenomas have size more than 5cm

Clinically presents as a painless swelling which is smooth , non tender, firm, well localised and free mobility within the breast tissue

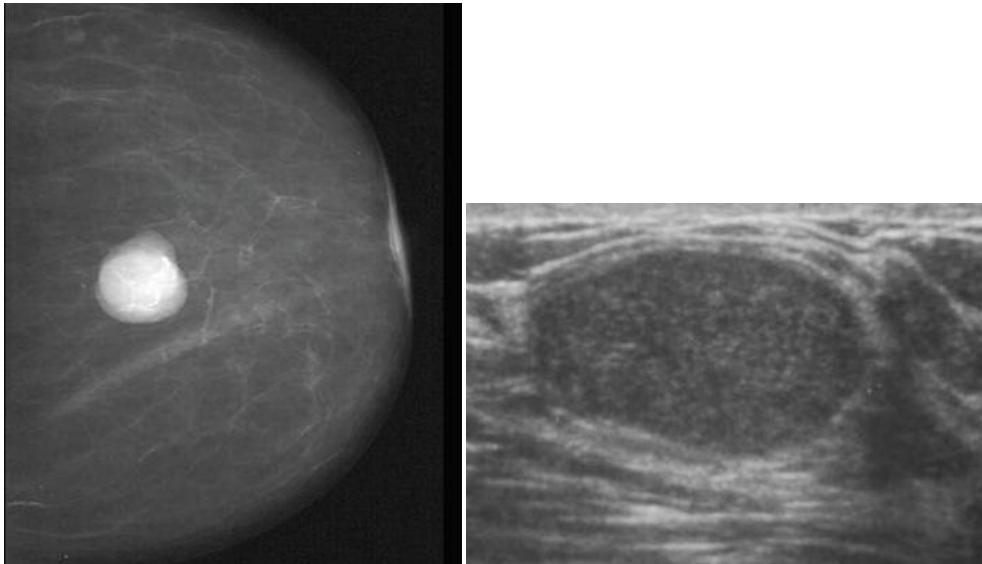
## **CYTOLOGY AND HISTOPATHOLOGY**

Grossly well circumscribed , firm with cut surface showing whitish grey lobulated, or whorl like pattern with slit like spaces

Microscopy shows epithelial proliferation in single terminal duct unit, shows duct like spaces surrounded by stroma. Two histological types intracanalicular and pericanalicular. Cells show no atypia.



**Mammogram** shows well circumscribed mass with regular outline



**Ultrasounds** shows solid nature of the lesion

## **FIBROCYSTIC CYSTIC DISEASE OF BREAST OR CYCLICAL MASTALGIA WITH NODULARITY**

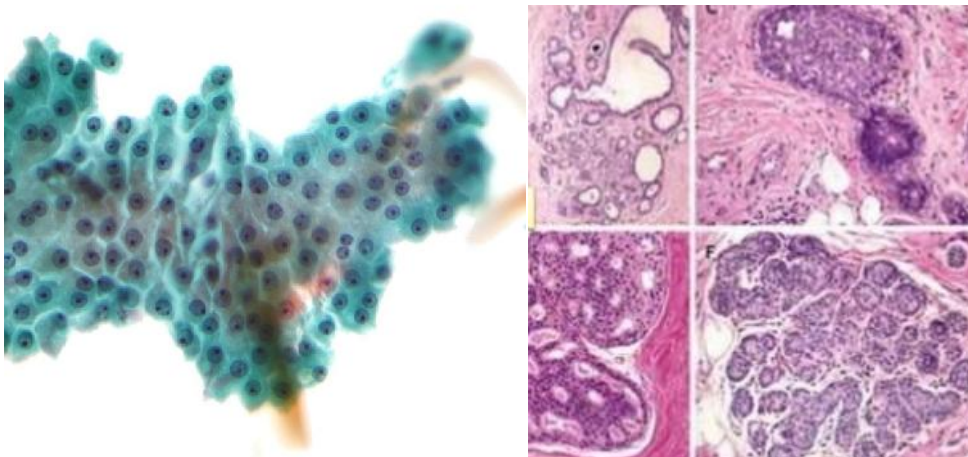
Most common breast disease.. There are three stages stromal proliferation followed by adenosis and cyst formation. Classified as non proliferative, proliferative without atypia and with atypia

Presents as painful diffuse granular swelling which is tender. Associated cyclical mastalgia will be there.

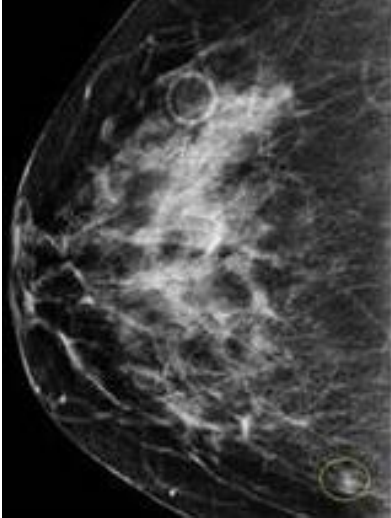
## **CYTOLOGY AND HISTOPATHOLOGY**

Grossly clear or blue domed cyst with soft tissue

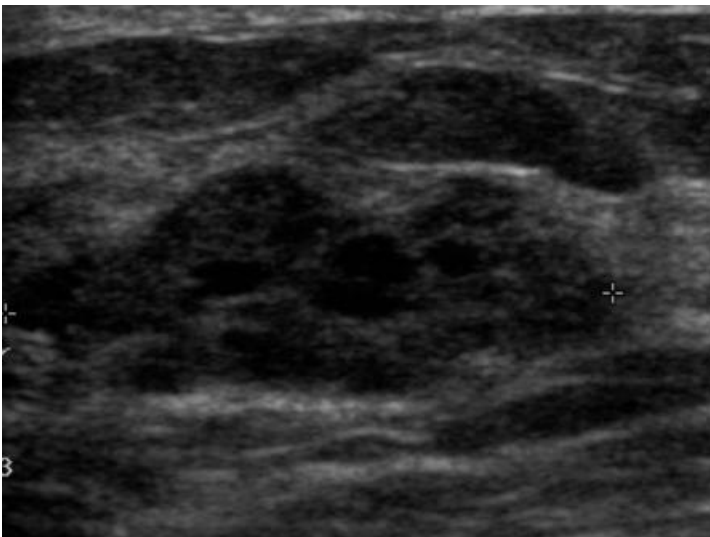
Microscopically stromal fibrosis, glandular proliferation, epitheliosis in ducts and acini, microcyst formation and papillomattosis may be present.



**Mammography** shows heterogenous dense parenchyma , partially circumscribed masses, low density round calcifications



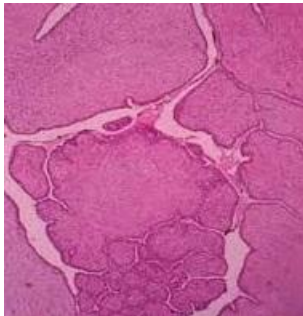
**Ultrasound** shows small cysts and prominent fibroglandular tissue in the region of palpable nodule



## **PHYLLODES TUMOUR**

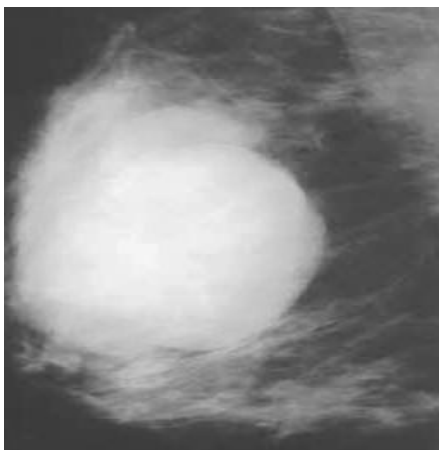
Phyllodes tumour can be benign (85%) to malignant (15%). Presents as rapidly growing swelling with bosselated surface which is non tender , smooth, soft and fluctuant. Skin over the swelling is stretched , red , with dilated veins

**Microscopy** shows cystic spaces containing leaf like projections. Cells with hypercellularity and pleomorphism



**Mammogram** shows large round well circumscribed lesions with smooth margin.

Radiolucent halo may be present. Very few calcifications seen



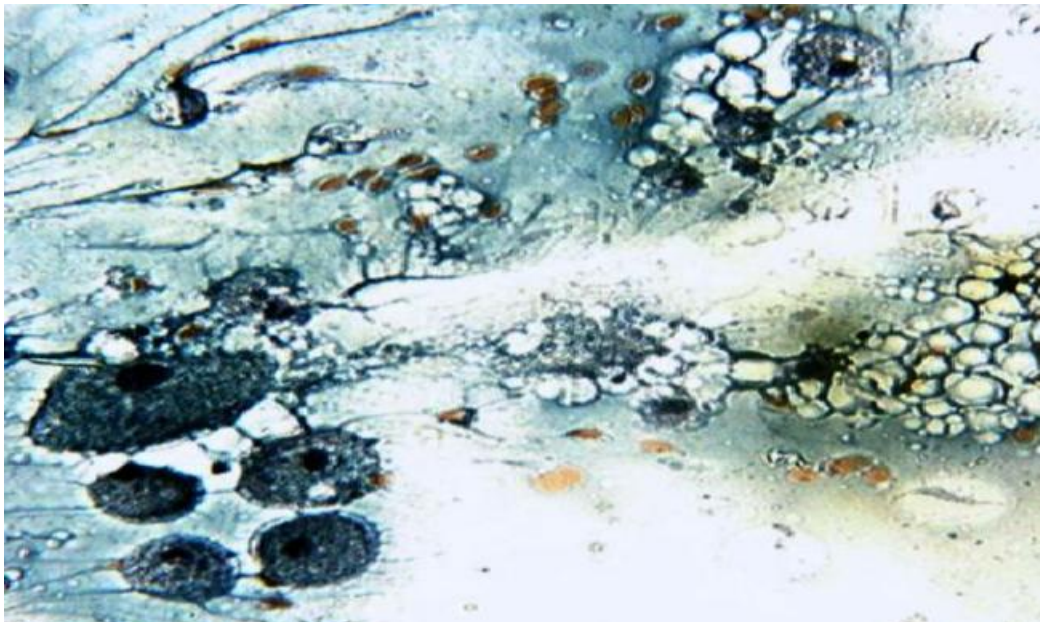
**Ultrasound** shows solid mass with round or cleft like cystic spaces with posterior acoustic enhancement

### **GALATOCOELE**

Seen in lactating woman during cessation of lactation. Presents as a painless bilateral or unilateral lump which is soft , fluctuant with a smooth surface. It may get infected or calcified.

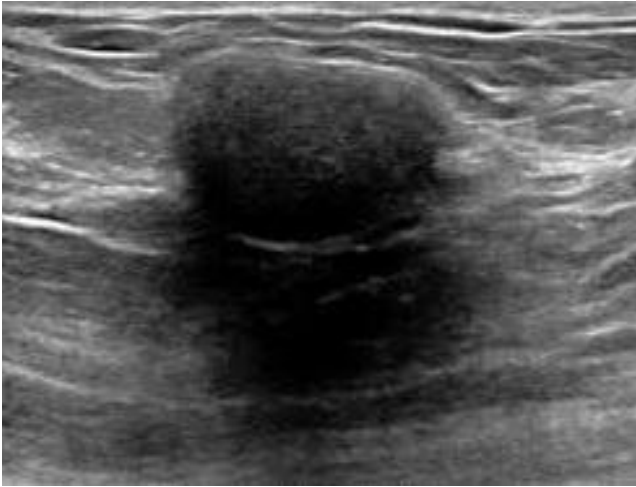
### **FNAC**

On aspiration creamy, thick greenish brown fluid drains which contains milk fat



**Mammogram** findings depend on content. It may appear as a pseudolipoma or fat fluid level within cyst

**Ultrasound** cystic or multicystic in 50%, mixed in 38% and solid in 12 %.

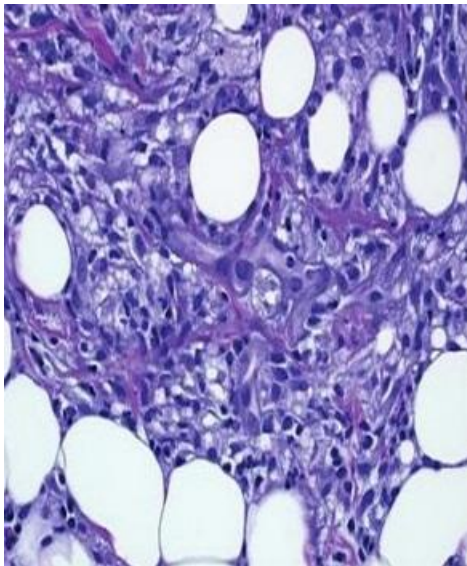




## **TRAUMATIC FAT NECROSIS**

Trauma may be a direct or indirect one. Presents as a painless non progressive swelling which is smooth hard and adherent to breast tissue

**Aspiration** shows a milky, fat emulsified appearance. Cytology shows disrupted fat cells with vacuoles surrounded by lipid laden macrophages, multinucleated giant cells.



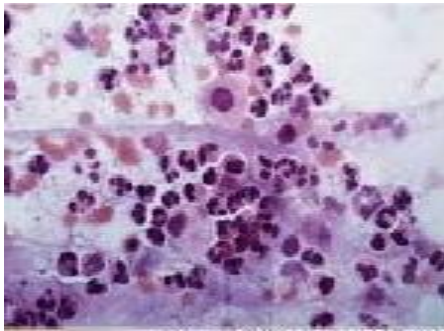
**Mammography** initially shows irregular border with spiculations. Later calcifications can mimic the features of malignant breast disease. Peripheral calcification leads to the formation of oil cysts

**Ultrasound** of the breast shows hypoechoic mass with well defined margins.

## **BREAST ABSCESS**

Most common in lactating woman. precipitating factors such cracked nipples, improper sucking by infant, secondary infection of haematoma or galactocoele, infection from mouth of baby are present.

**Clinical features** include Febrile patient ,Continuous pain throbbing in nature, Discharge from nipple mainly purulent, Tender fluctuant swelling will be felt. On **aspiration** frank pus is drained



**Ultrasound** features of breast abscess are,Multiloculated hypoechoic collection,Fluid content will have acoustic enhancement, An echogenic rim which is vascular.

**Mammogram** is rarely done and findings are non specific

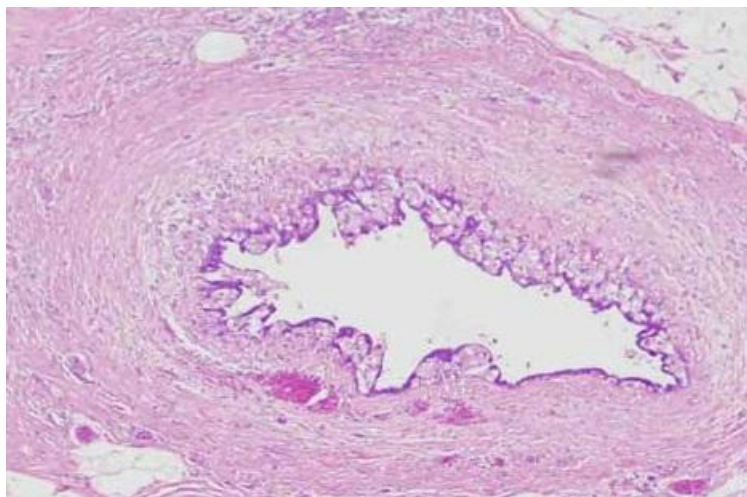
## DUCT ECTASIA

Myoepithelial relaxation of lactiferous ducts results in ductal dilatation with periductal mastitis.

Clinical features include

1. Discharge from the nipple which is typically greenish with creamy consistency.
2. Tender indurated mass may be felt.
3. Slit like retraction of nipple due to fibrosis may be present.
4. An abscess or fistula forms in a long standing lesion

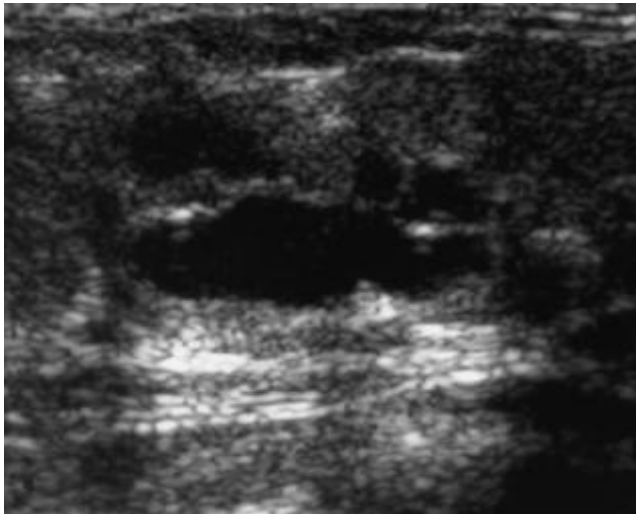
**Cytology** shows ductal epithelial cells. Plasma cells may be present as periductal inflammation contains plasma cells



**Mammography** shows

1. Subareolar region having dilated linear branching densities
2. Calcifications which are rod like or cigar like underneath the nipple

**Ultrasound** shows dilated fluid filled subareolar spaces filled with debris.



## **SIMPLE BREAST CYST**

Cyst are cavities lined by breast epithelium containing fluid. Arises due breast lobule and terminal ductile destruction and dilatation Patient presents a lump which is smooth, soft, fluctuant, transilluminant well localised On **aspiration** straw coloured or green or opaque fluid drains.

**Sonographic** features of a simple cyst are

1. Anechoic with internal echoes
2. Smooth cyst wall
3. Well circumscribed margins
4. Enhancement of posterior acoustic signals
5. Reverberation artefact

**Mammogram** shows peripheral calcification as smooth well circumscribed lesion with clear outline

## **DUCT PAPPILLOMA**

They are polyps lined by epithelium arising from the lactiferous ducts. It may often project out as a pedunculated mass with a vascular stalk.

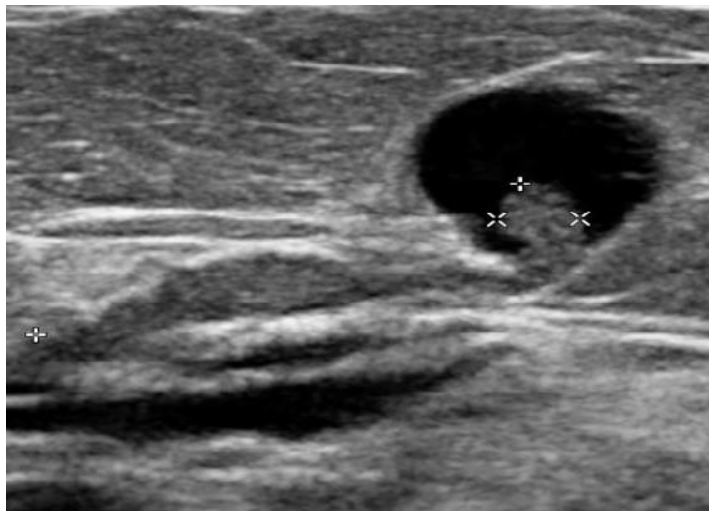
Clinical features are

1. Pedunculated mass seen protruding near the areola

2. Nipple discharge which is blood stained

**Mammogram** shows lesion under the areola , ductogram shows dilated ducts

**Ultrasonography** shows a solid lesion underneath the areola



## **TUBERCULOSIS OF THE BREAST**

Tuberculosis of breast presents as lump which is irregular , discharge may be present from skin ulcer, with matted axillary lymph nodes. May also present as a cold abscess or a discharging sinus Fnac and excision biopsy reveals caseating necrosis with giant multinucleated macrophages. Tb bacilli will be visible on acid fast staining.

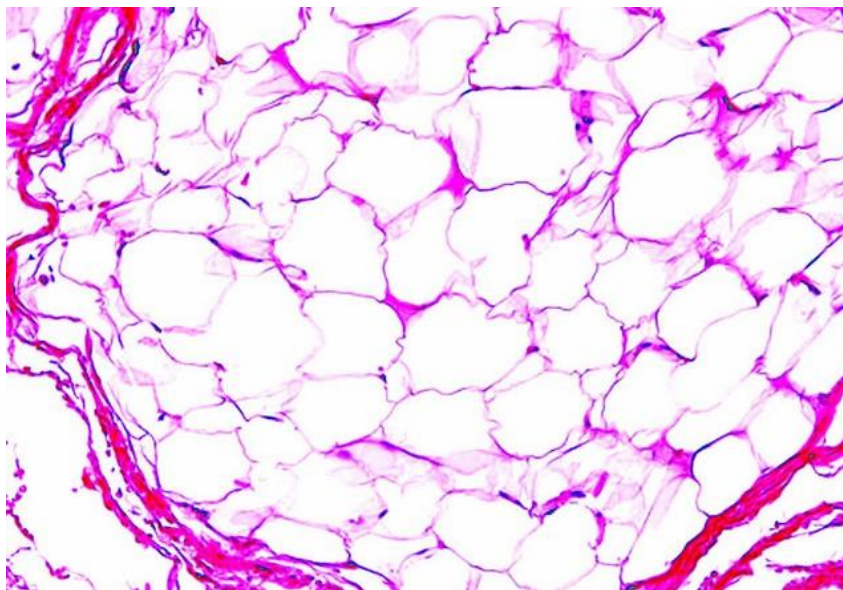
**Mammogram** features varies according to whether it is nodular , diffuse or sclerosing type. Mass is ill defined , reduction in total breast tissue, nipple retraction with stroma with a coarse texture

**Sonogram** of breast shows focal and sectorial duct ectasia. Axillary lymph nodes will be visualised

## **BREAST LIPOMA**

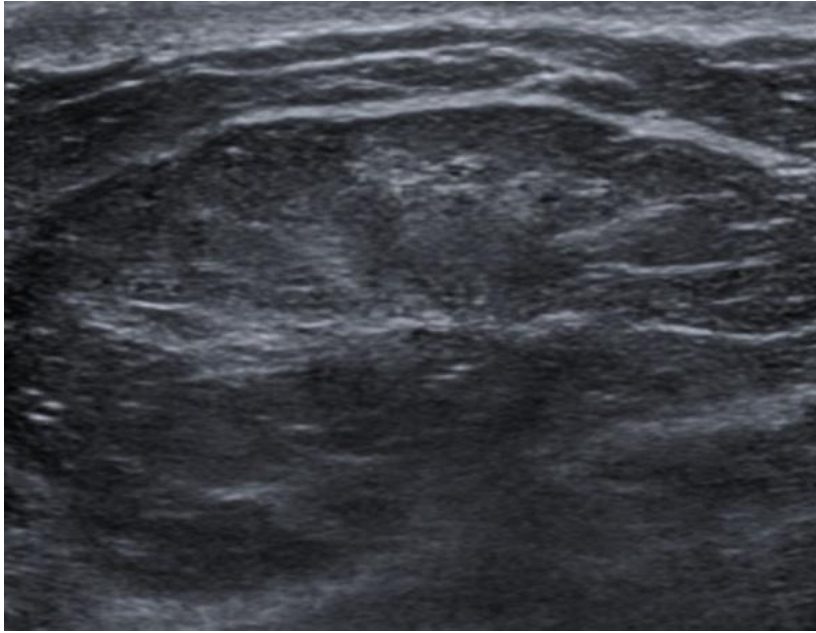
Are benign tumours of adipose tissue Clinically present as painless breast lump which is firm and mobile with the breast tissue. Skin over the swelling will be pinchable.

**Fine needle aspiration** cytology shows mature adipose cells with fat.



**Mammography** shows typical radiolucent lump with no calcification. A thin fluid density capsule may be present surrounding the lump.

**Ultrasound** of the breast shows a rounded isoechoic to surrounding fat. Occasional may be hypoechoic.



## **INSITU CARCINOMAS**

1. Ductal carcinoma insitu
2. Lobular carcinoma in situ

### **DUCTAL CARCINOMA IN SITU (DCIS)**

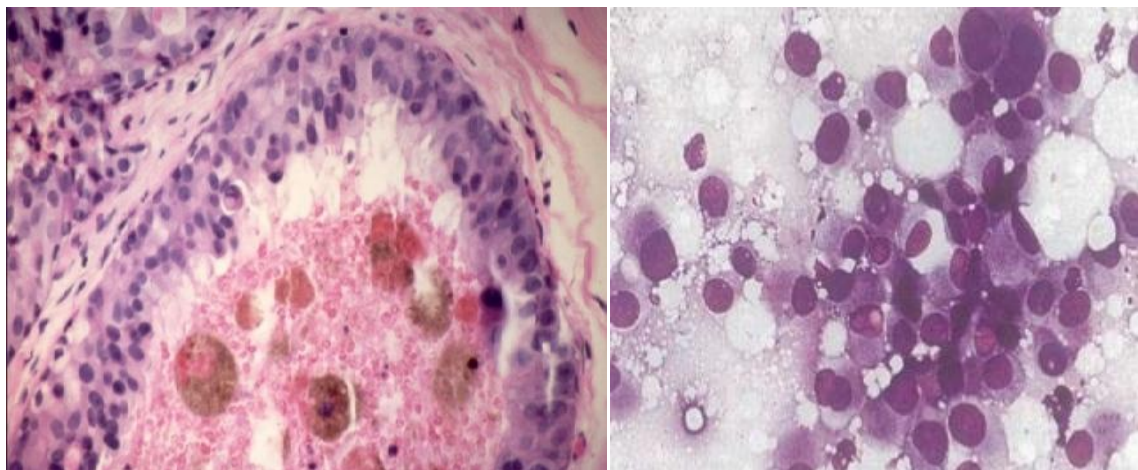
Intraductal carcinoma in situ consists of malignant proliferation of mammary ductal epithelial cells. There is no invasion in to the basement membrane. There is high expression of c – erb gene. The necrotic tissue in the centre will undergo and eventually calcification that leads in to formation of tiny small pleomorphic and linear forms that can be seen on mammogram. This finding on a mammogram is termed as segmental calcifications.



## CYTOLOGY AND HISTOPATHOLOGY

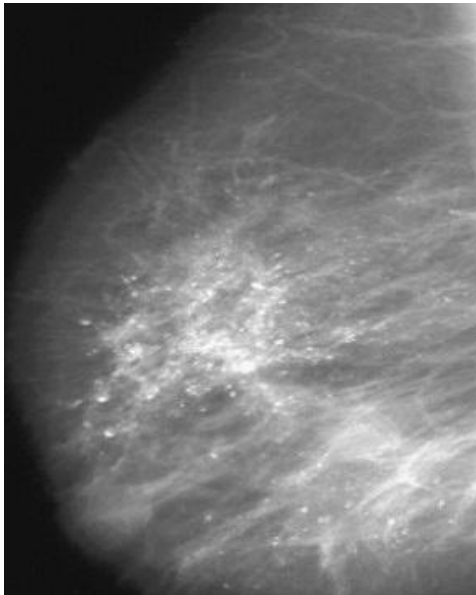
In ductal carcinoma in situ, histology is Characterised by the proliferation of the epithelium that is lining the minor ducts, resulting in papillary growths within the duct lumina. The different types are

1. Solid type which is high grade tumour
2. Comedo with central necrosis which is a high grade tumour with increased chances of invasion
3. Cribriform with low invasive potential
4. Papillary with low invasive potential
5. Micro Papillary



## **MAMMOGRAPHY**

Mammographic findings in ductal carcinoma in situ shows a variety of findings based on calcifications. The most common presentation is casting type calcifications which is found in 50-70 % of cases of ductal carcinoma in situ. Other findings may be a soft tissue shadow with or without associated calcifications.



### **Ultrasound of the breast in DCIS.**

A Micro lobulated mass with very mid hypoechogenic signals which shows Ductal extension with normal internal acoustic transmission is the most common feature suggestive of ductal carcinoma in situ. It is possible to identify the DCIS as it involves the process of growth in ductal system of the breast it also allows to pick up early the minute calcifications seen in ducts and if needs ultrasound guided biopsy may be taken.

## **MRI in DCIS**

The various pattern of presentation of DCIS on contrast MRI are biomass enhancements, clustered ring enhancement, mass or focus appearance.

## **LOBULAR CARCINOMA INSITU**

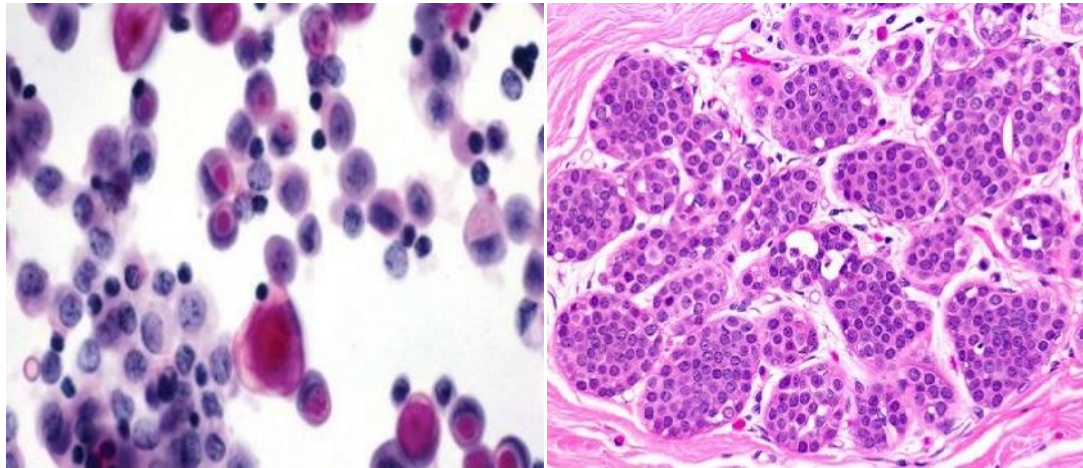
Lcis develops from terminal duct lobular units. Cells maintain a normal nuclear cytoplasmic ratio , these cells distorts and distends the terminal duct lobular units. A very characteristic feature is cytoplasmic mucoid globules. Seen in perimenopausal woman. There is 35% chance tha LCIS may later lead to invasive carcinoma in the same breast or contra lateral breast.. It is multifocal and bilateral and often has a poor prognosis.. LCIS is considered as marker for increased chance for developing invasive breast cancer rather than a anatomical precursor. Patients with LCIS should be counselled about the possibility of developing invasive breast cancer in future and regular screening should be done at regular time periods.

## **CLINICAL FEATURES**

Lobular carcinaoma insitu is most often an incidental diagnosis found on routine breast screening.

## **HISTOPATHOLOGY**

LCIS is originated from the terminal ductal lobular units. LCIS is made up of monomorphic group of cells which are small , round, polygonal, or cuboidal with a thin rim of clear cytoplasm. These cells are most often associated with a high nuclear cytoplasmic ratio. Intracytoplasmic lumina or magenta bodies which are cells containing clear vacuoles are characteristic and strongly suggestive of LCIS..



## **MAMMOGRAPHY**

Non specific microcalcifications are seen on mammogram. In LCIS adjacent tissue may go microcalcification apart from the lesion. A large number of patients with LCIS may have no features on mammogram.

## **CARCINOMA OF BREAST**

### Types of carcinoma breast

1. Invasive ductal carcinoma breast NST/NOS
2. Invasive lobular carcinoma breast
3. Paget's disease of breast.
4. Medullary carcinoma breast.
5. Mucinous carcinoma breast.
6. Papillary carcinoma breast.
7. Tubular carcinoma breast.
8. Schirrous carcinoma breast.
9. Inflammatory carcinoma breast.

### **1. Ductal carcinoma breast NST/NOS**

Invasive ductal carcinoma of the breast consists accounts for almost 80% of breast cancer worldwide. There is approximately 60% microscopic spread in to axillary nodes in symptomatic patients and 25% in patients undergoing screening for ca breast. Seen commonly in woman of 5<sup>th</sup> or 6<sup>th</sup> decade of life. It presents a poorly defined firm to hard mass .

## **2. Lobular carcinoma breast**

Invasive lobular carcinoma of breasts accounts for around 10% of cases worldwide. It presents as clinically inapparent carcinomas from one spectrum of presentation to those replacing the entire breast replaced with an illdefined mass. It is most often bilateral , multicentric and multifocal.

## **3. Pagets disease of breast .**

It presents as chronic , eczematous lesion of the nipple which may further lead to a ulcer. It is often associated with an underlying DCIS or an invasive carcinoma. A palpable may be felt.

## **4. Medullary carcinoma breast**

It accounts for 4% of invasive breast cancers. The tumour is soft clinically and often haemorrhagic. Rapid increase may occur due to haemorrhage and necrosis. It is often very bulky and situated deep within the breast tissue. Axillary lymph nodes more often enlarged due to intense lymphocyte response associated with the tumour.

## **5. Mucinous carcinoma of breast**

Mucinous or colloid carcinoma produces abundant mucin and clinically presents as a bulky mass. Cells are of low grade surrounded by

extracellular pool of mucin. It carries a better prognosis when compared to other types of breast cancers. Lymph nodes are often enlarged.

## **6. Papillary carcinoma of breast**

It is seen 2% of all breast cancers. They are characteristically are small and very rarely grow more than 3 cm.

## **7. Tubular carcinoma of the breast**

Accounts for 2% of breast cancers. Axillary lymph nodes are enlarged in 10% of patients .

## **8. Scirrhou carcinoma of breast**

It presents as a hard , irregular growth with consistency of cartilage. Fibrous tissue is seen in abundance in scirrhou carcinoma

## **9. Inflammatory carcinoma of the breast**

Also known as lactating carcinoma or mastitis carcinomatosis. It is the most aggressive type of invasive breast cancer. Commonly seen in lactating woman. It is very rapidly progressing tumour and clinically presents as a short duration , diffuse, very painful and warm lesion. It often involves the breast and skin involvement and chest wall involvement are common.

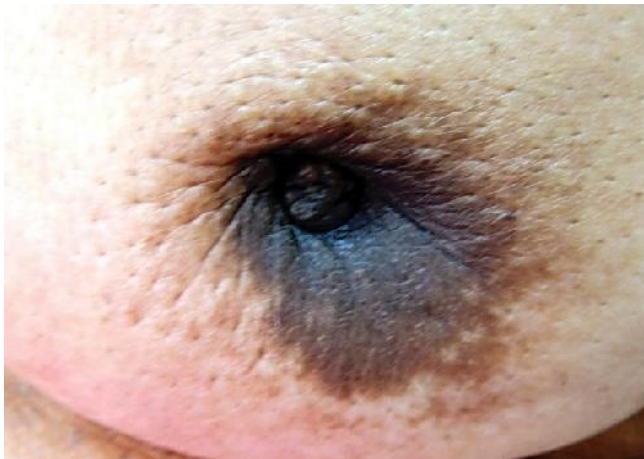
## CLINICAL FEATURES OF BREAST CANCER

Common clinical features are

1. Breast mass , breast enlargement or asymmetry of breasts



2. Nipple discharge, retraction of nipple , ulceration of the nipple and areola





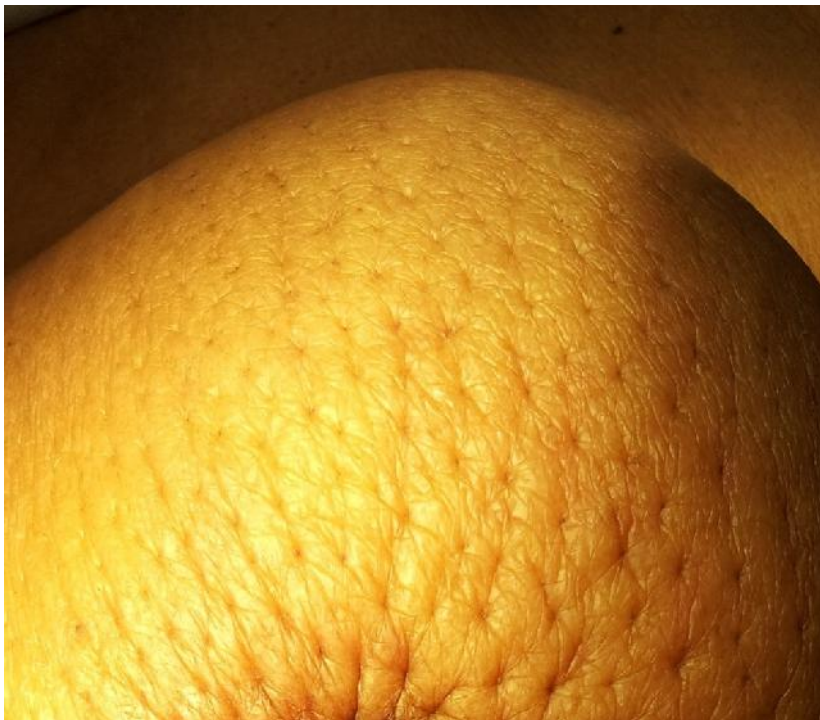
3. Ulceration of skin



4. Dimpling of skin

5. Retraction of skin

6. Peau d'orange appearance of skin



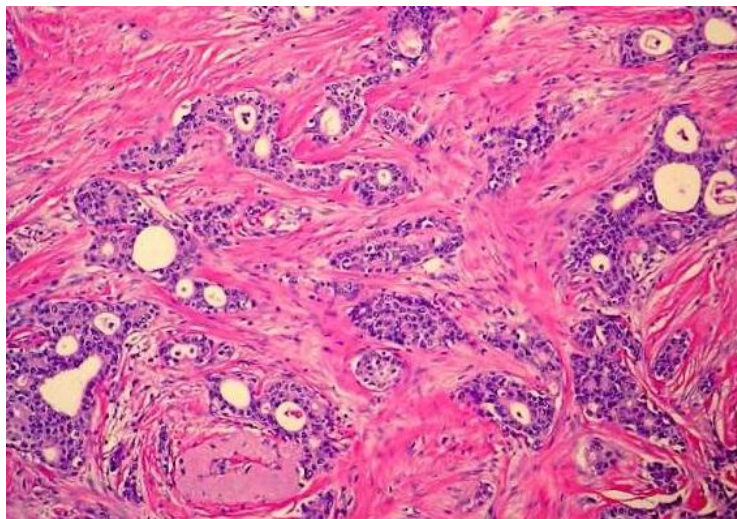
7. Palpable axillary or supraclavicular nodes

## **HISTOPATHOLOGICAL FEATURES OF CARCINOMA BREAST**

### **1. Invasive Ductal carcinoma breast NST/NOS**

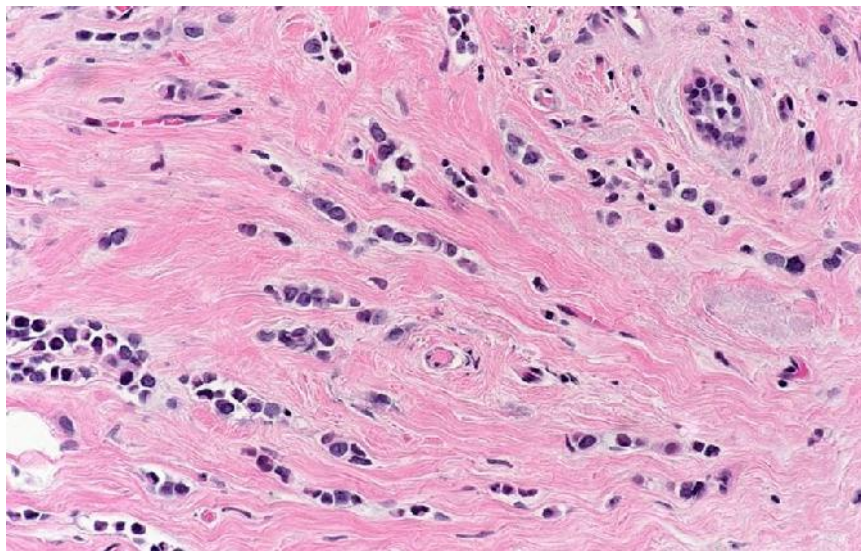
Gross : most tumours are hard and irregular . Cut section of the tumour shows central foci or streaks of chalky white elastotic stroma and foci of calcifications

Microscopy: characterised by cells with high nucleocytoplasmic ratio. High number of mitotic figures may be present. Proliferation rate is usually high. Tumour necrosis and microcalcifications are frequent. Tubule formation may vary from clusters of infiltrating cells to ragged nest/ solid sheets of cells.



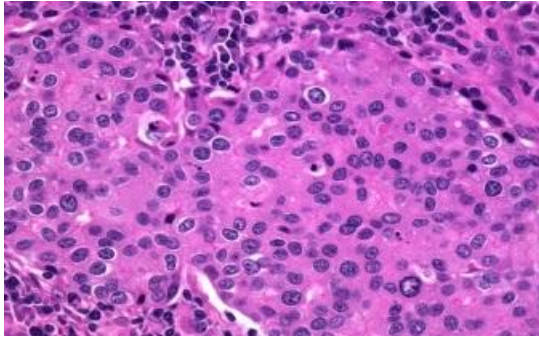
## **2. Invasive lobular carcinoma breast**

Morphological features are dyscohesive infiltrating tumour cells which are characteristic . cells may arranged in a single file or in loose clusters or sheets. Tubule formation is typically absent in lobular carcinoma. Intra cytoplasmic mucin droplet containing cells , called signet cells are common.



## **3. Medullary carcinoma breast**

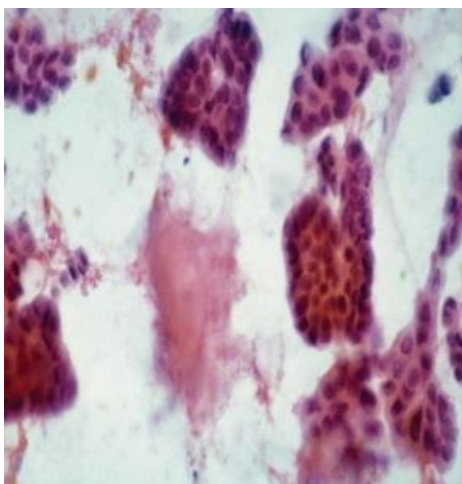
Large cells with pleomorphic and vesicular nucleus , very prominent and enlarged nucleoli are arranged in a solid or syncytium like sheets . mitotic figures are frequent. Non infiltrating margins are seen . moderate lymphoplasmacytic infiltration may be present. Cells are immunopositive for E cadherin .



#### **4. Colloid carcinoma breast**

Tumour is usually soft or rubbery in consistency. Appears like pale gray blue gelatine. Borders are usually circumscribed or pushing.

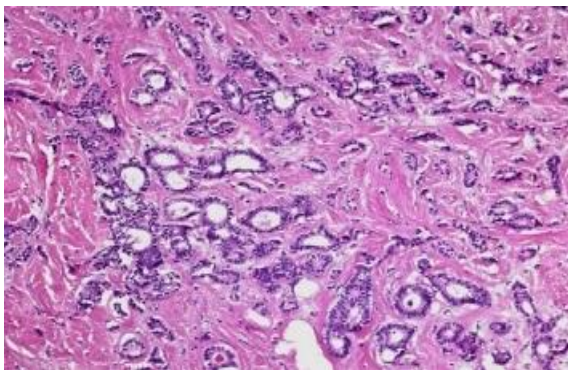
Tumour cells are seen arranged in large flakes of extracellular deposits of mucin as clusters and small islands. They are diploid ER positive. Lymph node metastasis is uncommon.





## **5. Tubular carcinoma breast**

Microscopically well form tubules with myoepithelial cell layer is seen . tumour cells are seen in direct contact with the stroma. Typical feature of tubular carcinoma is apocrine snouts. Calcifications are seen within the lumen.



## **6. Invasive pappillary carcinoma**

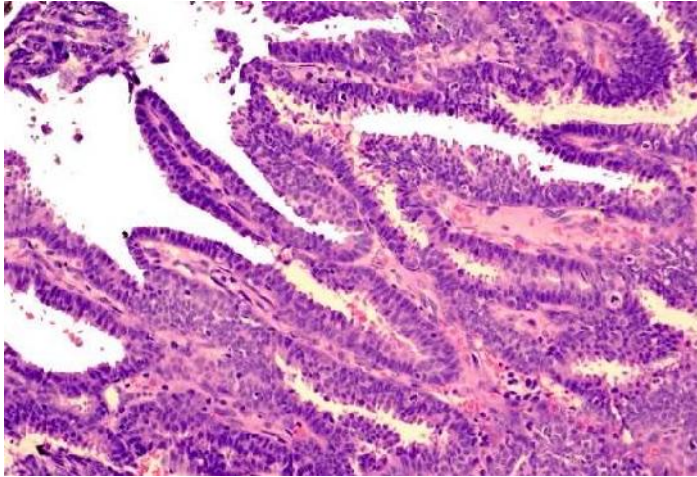
They are most commonly associated with DCIS. Histologically papillary carcinomas have the following cytological pattern

Cribriform

Compact columnar

Stratified spindle cell

Urothelial like transitional cell like pattern



## **7. Inflammatory carcinoma breast**

Most commonly associated with a invasive ductal carcinoma. Histologically a pathognomonic feature is the presence of dermal lymphatic invasion. In almost 90% cases there is the presence of tumour cells in dilated lymphatics.

## **8. Scirrhou carcinoma breast**

Scirrhou carcinoma histologically presents large amount of fibrosis present between clusters of tumour cells.

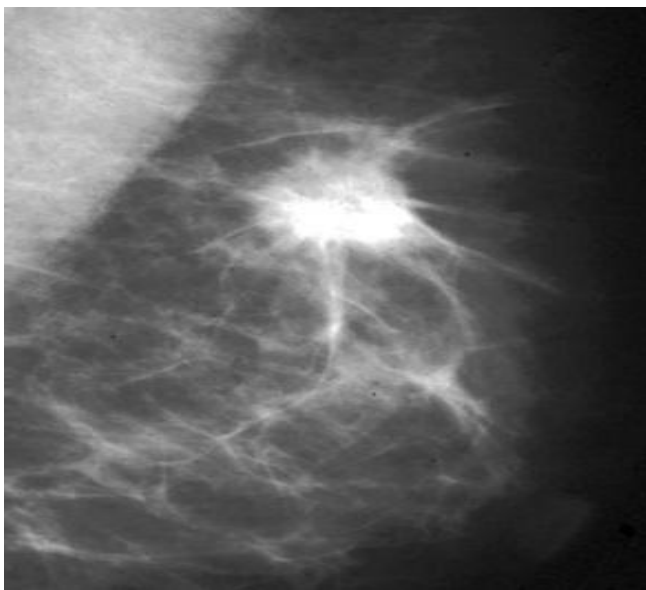
## **9. Pagets disease of breast**

In most the cases it is malignant ductal cells that extend through lactiferous ducts to surface of the nipple. The malignant cells called paget cells infiltrate the epidermis resulting eczematous rash of nipple and areola.

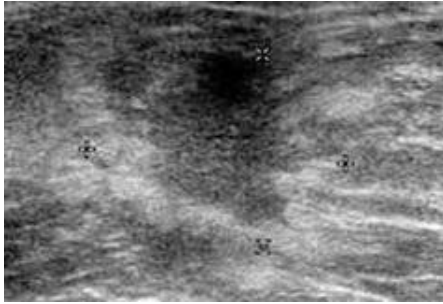
## IMAGING IN CARCINOMA BREAST

### 1. Ductal carcinoma breast NST/NOS

**Mammogram** : ductal carcinoma is most often seen as a speculated hyperdense lesion . it may be a oval or lobulated in shape . microcalcifications will be clearly visible in the lesion



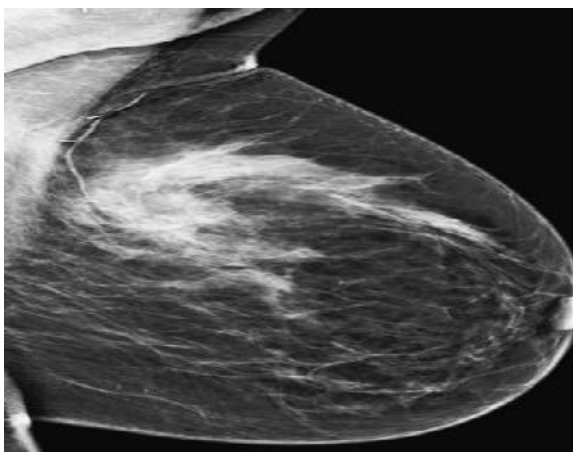
**Ultrasound** : ultrasonically they are visualised as a ill defined lesion that is hypoechoic. Hyperechoic angular margins will be seen . posterior acoustic shadowing , extension into surrounding parenchyma as ductal extension are other features. Microcalcifications , branched or speculated pattern are seen



**Mri** : T1 imaging shows a lesion isointense to parenchyma and hypointense to fat. T2 imaging shows hyperintense edematous zone. Gadolinium enhancement shows ring enhancement and dilated veins that drains the tumour.

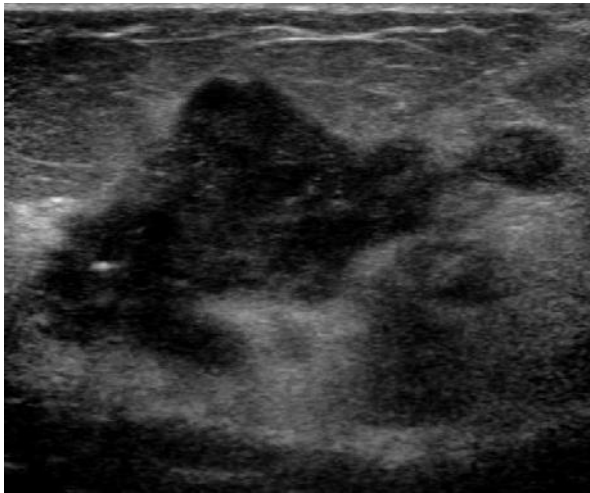
## **2. Invasive lobular carcinoma breast**

Mammogram : the findings include most commonly a speculated mass lesion, asymmetrical densities within the breast, architectural distortions, and microcalcifications





Ultrasound :a heterogenous mass that is hypoechoic with ill defined margins and posterior acoustic shadowing. It may be seen as disproportionate posterior shadowing , heterogenous area with low echogenicity.



Mri :multicentric lesions are the usual findings

### **3. Invasive medullary carcinoma**

Mammography : seen as ovoid or circular lesion with ill defined margins.

Varying amount of lobulations may be seen. Calcifications are rare

Ultrasound : lesion is homogenous or heterogenous , hyperechoic or hypoechoic . there may marked hypoechogenicity.

Mri : diffuse enhancement with contrast imaging

#### **4. Inflammatory carcinoma breast**

Mammography: tumor lesion with microcalcifications. Inflammatory changes like trabecular thickening or coarsening with increased breast density.

Ultrasound: ultrasound shows a hypoechoic shadowing mass , the increased breast density may obscure the lesion. Skin thickening , posterior muscle invasion may be seen.

Mri: lesion is often small , multiple , with irregular margins, heterogeneous with internal enhancement. Skin thickening may also be visualized.

#### **5. Tubular carcinoma**

Mammogram: small lesion , speculated with or without calcifications. Spicules are longer than the mass. Often mimics appearance of ductal carcinoma. Amorphous microcalcifications may be present.

Ultrasound: seen as a hypoechoic solid mass with ill defined margins with posterior acoustic shadowing.

#### **6. Mucinous carcinoma breast**

Mammogram: low density well defined mass which is lobulated. Calcifications are very rare

Ultrasound: mucinous carcinoma shows mixed echogenicity with solid and cystic components. Lesion may be isoechoic as well. Posterior acoustic shadowing is present.

Mri: they have high intensity on T2 weighted images due to high water content in mucin.

## **7. Papillary carcinoma breast**

Mammogram :most common finding is round lobulated or oval mass. Margins may be circumscribed or ill defined. Microcalcifications or dilated ductal pattern may be present.

Ultrasound: usually a hypo echoic and solid mass with posterior acoustic shadowing.

## CONCLUSION

In my study the most common breast diseases were fibroadenoma , fibrocystic disease of breast , phyllodes tumor , galactocoele, invasive ductal carcinoma , invasive lobular carcinoma and invasive medullary carcinoma.

Malignant breast disease is more common in post menopausal women(77.5% of malignant cases). Benign breast disease is more common in pre menopausal women(68.4% of all benign cases).

Fibrocystic cystic disease of breast is the most common benign breast disease **among all women**(27 out 100 cases). Invasive ductal carcinoma NST breast disease is the most common malignant breast disease **among all women**(24 out of 100 cases).

There is a higher incidence of invasive lobular carcinoma(32.5% of all malignant cases in study group) in study population when compared with patients with malignant breast disease in general population in india(10% of malignant breast disease in general population).

**In premenopausal women**, the most common benign breast disease is fibroadenoma( 24 cases , 58.5%). Invasive ductal carcinoma and invasive lobular carcinoma had equal percentage(45%). There is very high percentage

of invasive lobular carcinoma when compared to patients with malignant breast disease in general population in india.

**In post menopausal women** , the most common benign breast disease is fibrocystic disease of breast(17 patients , 89.5%).

The most common malignant breast disease was invasive ductal carcinoma breast NST(20 patients , 64.5% of malignant breast patients in post menopausal women). There was higher percentage of invasive lobular carcinoma( 9 patients, 29.9% of malignant patients in post menopausal women) when compared to patients with malignant breast disease in general population in india( 10 % of total cases).

**To conclude** the results obtained in this study was consistent with statistics in the general population in india except for the higher percentage of invasive lobular carcinoma in study group , both in pre menopausal and post menopausal women.

The study helped in early detection and treatment of ca breast. It helped in identifying the histological type of ca breast there by allowing to detect multifocal and multicentric lesions in the same or opposite breast.

This study shows an increased incidence of lobular carcinoma breast as compared to general population. Lobular carcinoma breast is associated with poor prognosis , more recurrence due to its multifocal and multicentric nature.

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# PROFORMA

1. NAME :
2. AGE :
3. OCCUPATION :
4. ADDRESS :
5. IP/OP NO. :
6. CBC :
7. RFT :
8. FASTING BLOOD SUGAR :
9. LFT :
10. FNAC OF BREAST LESION :
- 13 CORE BIOPSY HPE (if needed) :
- 14 POST OP SPECIMEN HPE REPORT :
- 15 USG BREAST :
- 16 MRI BREAST (if needed) :
- 17 MAMMOGRAM (if needed) :
- 18 USG ABDOMEN(if needed) :
- 19 CHEST XRAY(if needed) :
- 20 XRAY LONG BONES (if needed) :

**PATIENT CONSENT FORM**

**A COMPARATIVE STUDY OF BREAST LUMP IN PREMENOPAUSAL AND  
POST MENOPAUSAL WOMEN IN GVMCH**

STUDY DETAIL:

STUDY CENTRE:

PATIENT'S NAME:

PATIENT'S AGE:

IDENTIFICATION NUMBER:

I confirm that I have understood the purpose and procedure of the above study. I have the opportunity to ask questions and all my questions and doubts have been answered to my complete satisfaction.

I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving reason, without my legal rights being affected.

I understand that the sponsor of the clinical study, others working on the sponsor's behalf, the ethical committee and the regulatory authorities will not need my permission to look at my health records, both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the study I agree to this access. However I understand that my identity would not be revealed in any information released to third parties or published, unless as required under the law. I agree not to restrict the use of any data or results that arise from this study.

I hereby consent to participate in this study.

I hereby give permission to undergo complete clinical examination and diagnostic tests including haematological, biochemical, radiological tests.

Signature/thumb impression:

Patient's name and address:

Place:

Date:

Signature of the investigator:

Name of the investigator:

Place:

Date:

## A COMPARATIVE STUDY OF BREAST LUMP IN PREMENOPAUSAL AND POST MENOPAUSAL WOMEN IN GVMCH

### ஒப்பிதல்படிவம்

ஆராய்ச்சிதலைப்பு :

முழுபெயர் :

தந்தை / தாயார்பெயர் :

பிறந்ததேதி / வயது :

- I. நான் மேலே குறிப்பிட்டுள்ள ஆராய்ச்சி குறித்த வளக்க உரையையபடி, புரிந்துகொண்டேனென்று, எனக்கு கேள்வி கேட்க வாய்ப்பு அளிக்கப்பட்டது என்று உறுதிசெய்கிறேன்.
- II. நானிலுந்தஆராய்ச்சியிலபங்குபெறுவதுதன்னாசனசயாகத்தானென்று, நானபபொழுதுவேண்டுமானாலும், காரணம் ஏது தெரிவிகாமல இதை ஆராய்ச்சியிலிருந்து விலகமுற்பட எனக்கு அதிகாரம் உண்டு என்று, அப்படி செய்வதனால் என் சட்டரத்யா மறறும் சிகிச்சை சம்பந்தபட உரமைகள் பாதிக்கப்படமாட்டது என்றும் நான் அறிகிறேன்.
- III. இதை ஆராய்ச்சியான புரவலர் மற்றும் அவர்கள் சார்பாக பண்புரபவர்கள் நெறுமுறைகள் ( மற்றும் கட்டுப்பாட்டு குழுவானர் ஆகியோர், இதை ஆராய்ச்சியான பொதும், பன்னர் இதன் சம்பந்தமாக வெறு ஆராய்ச்சி செய்யும் பொதும், என் சம்பந்தப்பட சிகிச்சை வவரங்களை மேலும் எனது அனுமதி இன்றி காண் அனுமதி அளிக்கிறேன். முன்ற நபர்களுக்கு இதை ஆராய்ச்சியை பற்ற வளக்கும் பொதும், இதை ஆராய்ச்சியான முடிவுகளை பரகரக்கும் பொதும் எனது அடையாளம் வெளியிடப்படமாட்டது என்றும் நான் அறிகிறேன்.
- IV. இதை ஆராய்ச்சியான முலம் அறையப்படும் வவையங்கள் மற்றும் முடிவு அறிவியல் சாரந்த காரணங்களுக்காக வெளியிடப்படுவதை நான் எப்பொதும் தடுக்கமாட்டேன் என்று உறுதி அளிக்கிறேன்.
- V. நானிலுந்தஆராய்ச்சியிலபங்குபெறசமமதமதெரிவிககிறேன்.
  - 1) ஆராய்ச்சியில பங்கு பெறும் நபர் / சட்டப்பூர்வ பரதினதியான கையெழுத்து/ஆள்காட்டிவரலபதப்பு பெயர் / உறுமுறை
  - 2) ஆராய்ச்சியாளர் கையெழுத்து
  - 3) சாட்சி கையெழுத்து , தேதி



## MASTER CHART

Patient No	Patient Name	Sex	admission dt	Age	Menstrual status	Clinical exam	FNAC	CORE NED BX	Post op hpe	Ultrasound	mammo gram
42254	VALLIYAMMAL	Female	02/07/2016 - 11:03 AM	47	post menopausal	probably malignant	invasive ductal ca		invasive ductal ca	malignant	
47412	suguna	Female	31/07/2016 - 01:49 PM	50	post menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	
47534	VALLIMMAL	Female	08/08/2016 - 09:02 AM	65	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	malignant
48034	NAGAMMAL	Female	08/08/2016 - 09:27 AM	43	pre menopausal	probably malignant	invasive lobar ca		invasive lobar ca	malignant	
44703	VENDA	Female	18/07/2016 - 08:21 PM	45	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	inconclusive	
49162	KASI AMMA	Female	08/08/2016 - 09:30 AM	58	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	malignant
49163	SAROJA	Female	08/08/2016 - 09:33 AM	47	post menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	
50014	VASASNTA	Female	08/11/2016 - 09:08 AM	70	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	benign	benign
48754	MALAR	Female	08/06/2016 - 11:01 AM	49	post menopausal	probably malignant	invasive lobar ca		invasive lobar ca	malignant	
60140	BADRU BEE	Female	16/08/2016 - 10:10 AM	40	pre menopausal	probably malignant	inconclusive	invasive ductal ca	invasive ductal ca	malignant	

60142	AMSA	Female	16/08/2016 - 10:14 AM	61	post menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	
60144	ESWARI	Female	16/08/2016 - 10:17 AM	57	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
60416	THANGAMANI	Female	17/08/2016 - 10:26 AM	50	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	benign	
45017	DEVASITHAM	Female	20/07/2016 - 08:35 AM	39	pre menopausal	probably benign	inconclusive		invasive lobar ca	malignant	
46782	SOUNDARIYA	Female	28/07/2016 - 01:22 PM	30	pre menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	malignant
43424	MAKEWARI	Female	13/07/2016 - 11:51 AM	29	pre menopausal	probably malignant	invasive ductal ca		invasive ductal ca	benign	malignant
63135	VALLIYAMMAL	Female	29/08/2016 - 09:30 AM	48	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
63146	NAGAMMA	Female	29/08/2016 - 10:26 AM	44	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
62305	GOVINDAMMAL	Female	25/08/2016 - 08:22 AM	50	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
64957	SAROJA	Female	09/06/2016 - 09:33 AM	39	post menopausal	probably benign	inconclusive	invasive lobar ca	invasive lobar ca	malignant	
64975	KASIYAMMAL	Female	09/06/2016 - 10:35 AM	49	post menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	
65215	SOUNDARI	Female	09/07/2016 - 09:57 AM	64	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	benign	

66338	ESWARI	Female	09/12/2016 - 09:07 AM	65	post menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	
66345	PATTHRUBEE	Female	09/12/2016 - 09:26 AM	28	pre menopausal	probably benign	invasive medullary ca	invasive medullary ca	invasive medullary ca	benign	malignant
66348	AMSA	Female	09/12/2016 - 09:39 AM	35	pre menopausal	probably benign	invasive lobar ca		invasive lobar ca	malignant	
67203	KASIYAMMAL	Female	15/09/2016 - 01:28 PM	48	post menopausal	probably benign	inconclusive	invasive lobar ca	invasive lobar ca	benign	
67997	VENDA	Female	19/09/2016 - 09:58 AM	36	pre menopausal	probably malignant	invasive ductal ca		invasive ductal ca	malignant	malignant
68816	RANJITHAM	Female	22/09/2016 - 11:40 AM	38	pre menopausal	probably benign	inconclusive		invasive lobar ca	malignant	
69062	VASANTHA	Female	23/09/2016 - 09:42 AM	38	pre menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
69803	KANNAGI	Female	26/09/2016 - 10:53 AM	64	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
69748	VALLIYAMMAL	Female	26/09/2016 - 09:02 AM	61	post menopausal	probably malignant	invasive ductal ca		invasive ductal ca	malignant	
69754	nagammal	Female	26/09/2016 - 09:26 AM	66	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
69799	POONGAVANAM	Female	26/09/2016 - 10:39 AM	71	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
70155	PADMAVATHY	Female	27/09/2016 - 12:40 AM	46	post menopausal	probably benign	invasive medullary ca	invasive medullary ca	invasive medullary ca	malignant	

70963	MUNIYAMMA	Female	30/09/2016 - 05:12 PM	42	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	inconclusive	
71523	SAROJA	Female	10/08/2016 - 10:22 AM	48	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	benign	
71531	VANARANI	Female	10/08/2016 - 10:35 AM	63	post menopausal	probably malignant	invasive ductal ca		invasive ductal ca	malignant	
72078	BATHUN BEE	Female	10/09/2016 - 09:47 AM	58	post menopausal	probably benign	invasive ductal ca		invasive ductal ca	malignant	
72082	AMSA	Female	10/09/2016 - 10:02 AM	39	post menopausal	probably malignant	invasive lobar ca		invasive lobar ca	malignant	malignant
69840	KARPAGAM	Female	26/09/2016 - 11:32 AM	40	pre menopausal	probably benign	benign phylodes		benign phylodes	benign	
73706	CHINNAPONNU	Female	10/12/2016 - 10:45 AM	37	pre menopausal	probably benign	galactoceles		galactoceles	galactocoele	
73681	SOUNDARI	Female	10/12/2016 - 08:44 AM	56	post menopausal	probably benign	inconclusive	fibroadenosis	fibroadenoma	benign	
73968	AMSA	Female	13/10/2016 - 10:30 AM	43	pre menopausal	probably benign	benign phylodes		benign phylodes	benign	
75381	NAGAMMA	Female	19/10/2016 - 09:50 AM	33	pre menopausal	probably benign	benign phylodes		benign phylodes	benign	
75383	VALLIAMMA	Female	19/10/2016 - 09:54 AM	76	post menopausal	probably malignant	inconclusive	fibroadenosis		benign	benign
75387	POONGAVANAM	Female	19/10/2016 - 10:06 AM	51	post menopausal	probably malignant	inconclusive	inconclusive	duct ectasia	duct ectasia	

72591	SAROJA	Female	10/07/2016 - 09:13 PM	31	pre menopausal	probably benign	lipoma		lipoma	benign	
68319	malliga	Female	20/09/2016 - 10:51 AM	38	pre menopausal	probably benign	galactoceles		galactoceles	galactocoele	
73254	THANTHONIYAMMA	Male	10/10/2016 - 09:29 AM	59	post menopausal	probably benign	fibroadenosis		fibroadenoma	benign	benign
74064	NIROSHA	Female	13/10/2016 - 02:18 PM	30	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
80615	PATCHAYAMMA	Female	10/11/2016 - 10:15 AM	40	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
80188	VIJIYA	Female	11/08/2016 - 12:02 AM	32	pre menopausal	probably benign	inconclusive	fibroadenosis		benign	
78343	KAVITHA	Female	11/11/2016 - 12:29 AM	34	pre menopausal	probably benign	inconclusive	fibroadenosis		benign	
81107	SANGEETHA	Female	12/11/2016 - 11:08 AM	26	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
81106	GIRIJA	Female	12/11/2016 - 11:08 AM	29	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
83613	DHANALAKSMI	Female	23/11/2016 - 09:36 AM	26	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
85621	SELVI	Female	12/12/2016 - 08:28 AM	39	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
88579	KALAI SELVI	Female	16/12/2016 - 10:09 AM	49	post menopausal	probably benign	fibroadenosis			benign	

89876	MEGALA	Female	22/12/2016 - 09:58 AM	57	post menopausal	probably benign	fibroadenosis		fibroadenoma	benign	
90632	FAWSIYA	Female	26/12/2016 - 09:33 AM	41	pre menopausal	probably benign	chronic breast abscess		abscess	malignant	
91533	SHAYIN BANU	Female	30/12/2016 - 12:10 AM	42	pre menopausal	probably malignant	fibroadenosis			benign	
302	SIVAKAMI	Female	01/02/2017 - 12:33 AM	49	post menopausal	probably benign	inconclusive		fibroadenosis	fibroadenosis	
758	MANIMEGALAI	Female	04/01/2017 - 10:50 AM	67	post menopausal	probably benign	fibroadenosis			benign	
3628	PADMA	Female	18/01/2017 - 10:03 AM	35	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
4058	POONGODI	Female	20/01/2017 - 09:15 AM	32	pre menopausal	probably malignant	fibroadenoma		fibroadenoma	fibroadenoma	
5110	SANGEETHA	Female	25/01/2017 - 10:56 AM	29	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
5536	PATCHAIYAMMAL	Male	27/01/2017 - 09:46 AM	38	pre menopausal	probably benign	fibroadenosis			benign	benign
6110	ARUNA	Female	30/01/2017 - 12:05 AM	27	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
8058	LAVANYA	Female	02/08/2017 - 10:21 AM	38	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
8478	LAKSHMI	Female	02/10/2017 - 10:08 AM	29	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	

9450	VAISNAVI	Female	15/02/2017 - 08:30 AM	68	post menopausal	probably benign	inconclusive	fibroadenosis		benign	
10087	LAVANYA	Female	18/02/2017 - 11:47 AM	54	post menopausal	probably benign	fibroadenosis			benign	
9542	AGILANDESWARI	Female	15/02/2017 - 01:55 PM	36	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
4729	REVATHY	Female	28/02/2017 - 11:38 PM	47	post menopausal	probably benign	fibroadenosis			benign	benign
13127	SHANKARI	Female	03/03/2017 - 08:03 AM	38	pre menopausal	probably malignant	fibroadenoma		fibroadenoma	fibroadenoma	
14149	AMUDHA	Female	08/03/2017 - 09:12 AM	29	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
17010	PARIMALA	Female	21/03/2017 - 09:26 AM	32	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
17040	MARAGATHAM	Female	21/03/2017 - 11:17 AM	34	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
19400	savitha	Female	29/03/2017 - 9:00 AM	29	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
20103	PRADEEPA	Female	04/01/2017 - 12:53 AM	70	post menopausal	probably benign	inconclusive	fibroadenosis		benign	
20784	CHITRA	Female	04/05/2017 - 10:22 AM	54	post menopausal	probably benign	fibroadenosis		fibroadenoma	benign	
24412	ANJALI	Female	21/04/2017 - 12:14 AM	55	post menopausal	probably benign	fibroadenosis		fibroadenoma	benign	

24431	CHITRA	Female	21/04/2017 - 01:16 AM	40	pre menopausal	probably benign	fibroadenosis			benign	
23858	ABISHEK	Female	19/04/2017 - 10:01 AM	37	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
24146	MEGALA	Female	20/04/2017 - 10:55 AM	30	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
25738	MANIMEGALAI	Female	27/04/2017 - 11:47 AM	30	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
27450	BANUPRIYA	Female	05/05/2017 - 10:40 AM	39	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
28335	kalaiselvi	Female	05/09/2017 - 10:58 AM	50	post menopausal	probably benign	fibroadenosis			benign	
30234	JEEVA SUNDARI	Female	17/05/2017 - 08:48 AM	27	post menopausal	probably benign	fibroadenosis			benign	
30304	VASANTHI	Female	17/05/2017 - 11:39 AM	35	pre menopausal	probably benign	fibroadenosis		fibroadenoma	benign	
30003	SARMILA	Female	16/05/2017 - 11:21 AM	52	post menopausal	probably benign	papilloma	papilloma	fibroadenoma	benign	
31594	sevanthi	Female	22/05/2017 - 10:55 AM	51	post menopausal	probably malignant	inconclusive	fibroadenosis		benign	
33286	MOHANA VALLI	Female	29/05/2017 - 11:14 AM	58	post menopausal	probably benign	fibroadenosis			benign	benign
33296	PUSHPANJALI	Female	29/05/2017 - 01:04 PM	25	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	



33830	KARPAGAM	Female	31/05/2017 - 10:53 AM	38	pre menopausal	probably benign	fibroadenoma		fibroadenoma	fibroadenoma	
34950	TAMIL ARASI	Female	06/05/2017 - 09:33 AM	59	post menopausal	probably benign	inconclusive		fibroadenosis	benign	
30607	LAXMI	Female	18/05/2017 - 01:11 PM	36	pre menopausal	probably benign	fibroadenosis			benign	
35292	ABINAYA	Female	06/06/2017 - 11:13 AM	35	pre menopausal	probably benign	fibroadenosis			benign	
37413	SATHIYA	Female	15/06/2017 - 10:31 AM	27	pre menopausal	probably benign	fibroadenosis		fibroadenoma	benign	